



Primary Health Care Management Advancement Programme

# **MONITORING AND EVALUATING PROGRAMMES**



**MODULE 5  
USER'S GUIDE**

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## THE PHC MAP SERIES OF MODULES, GUIDES AND REFERENCE MATERIALS

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Each module includes :

- a User's guide
- a Facilitator's guide
- computer programs

Module 1 Assessing information needs

Module 2 Assessing community health needs and coverage

Module 3 Planning and assessing health worker activities

Module 4 Surveillance of morbidity and mortality

Module 5 Monitoring and evaluating programmes

Module 6 Assessing the quality of service

Module 7 Assessing the quality of management

Module 8 Cost analysis

Module 9 Sustainability analysis

Manager's guides and references

- Better management: 100 tips
- Problem-solving
- Computers
- The computerised PRICOR thesaurus

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Cover photo: Community involvement is important in the monitoring and evalua-  
tion of health programmes, such as the BRAC in Bangladesh, which  
mobilises women's groups

Photo by: Jean-Luc Ray for AKF



THE AGA KHAN UNIVERSITY



AGA KHAN FOUNDATION

**Primary Health Care Management Advancement Programme**

# **MONITORING AND EVALUATING PROGRAMMES**

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## **MODULE 5 USER'S GUIDE**

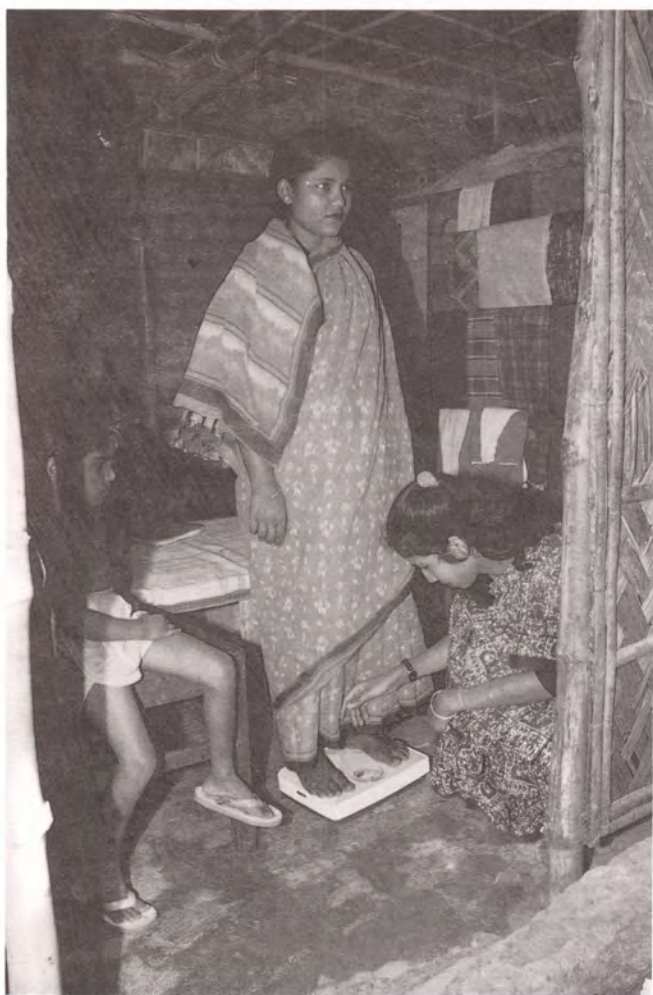


Aga Khan Health Services



University Research Corporation  
Center for Human Services





A CHW monitors the weight of a mother during a prenatal home visit in a peri-urban slum of Dhaka, Bangladesh

Photo by Jean-Luc Ray for AKF

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*Dedicated to  
Dr. Duane L. Smith (1939-1992),  
Dr. William E. Steeler (1948-1992)  
and all other health leaders, managers and workers  
who follow their example in the effort to bring quality health  
care to all in need.*





The monitoring of levels of health awareness among women of all generations, particularly in rural areas like this village in China where contamination from farmyard manure is frequently a problem, can help track achievements, refine strategies and set improved priorities and action plans

Photo by Jean-Luc Ray for AKF



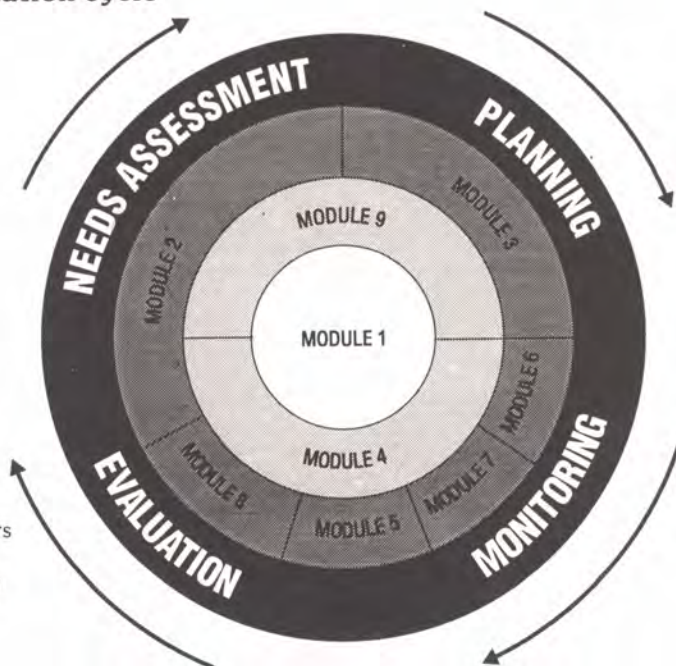
# An overview of PHC MAP

**The main purpose of the Primary Health Care Management Advancement Programme (PHC MAP) is to help PHC management teams collect, process and analyse useful management information.**

Initiated by the Aga Khan Foundation, PHC MAP is a collaborative programme of the Aga Khan Health Network<sup>1</sup> and PRICOR.<sup>2</sup> An experienced design team and equally experienced PHC practitioner teams in several countries, including Bangladesh, Chile, Colombia, the Dominican Republic, Guatemala, Haiti, India, Indonesia, Kenya, Pakistan, Senegal, Thailand and Zaire, have worked together to develop, test and refine the PHC MAP materials to make sure that they are understandable, easy to use and helpful.

PHC MAP includes nine units called modules. These modules focus on essential information that is needed in the traditional management cycle of planning-doing-evaluating. The relationship between the modules and this cycle is illustrated below.

## PHC MAP modules and the planning - evaluation cycle



### PHC MAP MODULES

1. Information needs
2. Community needs
3. Work planning
4. Surveillance
5. Monitoring indicators
6. Service quality
7. Management quality
8. Cost analysis
9. Sustainability

1 The Aga Khan Health Network includes the Aga Khan Foundation, the Aga Khan Health Services, and the Aga Khan University, all of which are involved in the strengthening of primary health care  
 2 Primary Health Care Operations Research is a worldwide project of the Center for Human Services, funded by the United States Agency for International Development





Managers can easily adapt these tools to fit local conditions. Both new and experienced programmers can use them. Government and NGO managers, management teams, and communities can all use the modules to gather information that fits their needs. Each module explains how to collect, process and interpret PHC-specific information that managers can use to improve planning and monitoring. The modules include User's guides, sample data collecting and data processing instruments, optional computer programs, and Facilitator's guides, for those who want to hold training workshops.

The health and management services included in PHC MAP are listed below:

### Health and management services

HEALTH SERVICES		MANAGEMENT SERVICES
<b>GENERAL</b> PHC household visits Health education	<b>OTHER HEALTH CARE</b> Water supply, hygiene and sanitation School health Childhood disabilities Accidents and injuries Sexually transmitted diseases HIV/AIDS Malaria Tuberculosis Treatment of minor ailments Chronic, non-communicable diseases	Planning Personnel management Training Supervision Financial management Logistics management Information management Community organisation
<b>MATERNAL CARE</b> Antenatal care Safe delivery Postnatal care Family planning		
<b>CHILD CARE</b> Breastfeeding Growth monitoring Nutrition education Immunization Acute respiratory infections Diarrhoeal disease control Oral rehydration therapy		

Several Manager's guides supplement these modules. These are: *Better management: 100 tips*, a helpful hints book describing effective ways to help managers improve what they do; *Problem-solving*, a guide to help managers deal with common problems; *Computers*, a guidebook providing useful hints on buying and operating computers, printers, other hardware and software; and *The computerised PRICOR thesaurus*, a compendium of PHC indicators.





PHC technological breakthroughs, such as Sabin's oral polio immunization, given here by a community health worker to a young child in a slum area of Dhaka, Bangladesh, can facilitate field work, the monitoring of services and achievement of targeted outcomes

Photo by Jean-Luc Ray for AKF



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# Contents

QUICK START .....	1
INTRODUCTION .....	5
Types of indicators to be monitored .....	6
How long should you monitor PHC activities? .....	15
Keep it straightforward and simple (KISS) .....	17
Limitations of service monitoring .....	17
MONITORING PROCEDURES .....	19
<b>Step 1:</b> Specify the monitoring objectives .....	20
<b>Step 2:</b> Decide on the scope of the monitoring .....	23
<b>Step 3:</b> Select the indicators and performance standards .....	24
<b>Step 4:</b> Choose information sources and develop data collection procedures .....	27
<b>Step 5:</b> Collect the data .....	29
<b>Step 6:</b> Tabulate and analyse the data .....	30
<b>Step 7:</b> Present the findings .....	33
<b>Step 8:</b> Take appropriate action .....	34
<b>Step 9:</b> Decide whether to continue monitoring .....	35
APPENDICES .....	
A. PHC service delivery indicators .....	39
B. PHC management indicators .....	65
C. Impact indicators for monitoring mortality, morbidity, disability, and fertility .....	75
D. Summary list of indicators for PHC activity monitoring .....	79
E. Blank worksheets .....	103



REFERENCES AND BIBLIOGRAPHY ..... 107

ACRONYMS AND ABBREVIATIONS ..... 108

GLOSSARY ..... 110



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## Quick start

If you want to get started quickly, follow these instructions for monitoring PHC activities. Monitoring is the periodic collection of data to determine if activities are being implemented as planned. Most PHC managers already have a monitoring system that records data regarding programme inputs and outputs.

In developing a practical monitoring system, you should consider the following guidelines:

- Keep the data collection and reporting simple for managers and workers with limited training.
- Collect only essential data. If there is no immediate need, do not collect the data. There are limits as to how much information a manager can collect and use effectively. Monitoring should not over-burden operational and MIS staff.
- Provide timely feedback and use the information. Make sure that managers at all levels receive, analyse and utilise the information.

This basic Quick start analysis makes two assumptions: the analysis will use existing data collection forms, or existing forms will be modified; and only input, output and effect data will be monitored. Inputs are the resources which enable the PHC programme to produce outputs. Outputs are the immediate services and products that your programme provides. Effects are the changes in knowledge, skills, motivation, behaviour (including coverage) that result from your products and services. You should already have an idea about the type of information that you need.

The Quick start involves three stages: planning, implementing, and reviewing.

### Stage 1: Planning

Specify the objectives by clarifying which PHC services or management services will be monitored, why the data will be gathered, and who will use it. You should be clear about the purpose of monitoring and who needs the information.

Determine the scope of monitoring by specifying the administrative areas, the types of facilities or service components, and the duration of data collection. In most cases data will be gathered for a short term to determine if programme resources and activities have been implemented as planned.

Select input, output and/or effect indicators for PHC services or management support services. The following are general indicators which can be used for most PHC services. Appendices A and B provide detailed lists of indicators.

#### PHC services

(For example, ANC, growth monitoring, immunizations, ORT, and curative care for ARI, malaria and other common diseases.):

##### Effects:

- Number or percent of target group covered by a PHC service, e.g., percent of children < 2 years fully immunized



- Number or percent of mothers who gain PHC skills, e.g., number who can prepare ORS solution correctly

#### **Outputs:**

- Number of services and products provided to new and continuing users, e.g., number of ORS packets distributed
- Number of contacts to inform and motivate eligible clients, e.g., number of community visits by programme teams

#### **Inputs:**

- Number of personnel per facility, e.g., number of nurses per clinic
- Number of supplies and equipment per facility or health worker (e.g., number of health workers with IEC materials)

### **Management support services**

For example, planning, training, supervision, personnel, MIS, logistics, and finance

#### **Effects:**

- Number or percent of health workers who gain needed skills, e.g., percent of trained CHWs who can counsel mothers on nutrition
- Number or percent of staff who follow program policies, e.g., number of drivers who use seat belts

#### **Outputs:**

- Number or frequency of management support activities completed, e.g., number of training sessions completed
- Number of products produced, e.g., number of financial reports distributed
- Number of supplies inventoried and distributed, e.g., number of BCG ampoules distributed to clinics

#### **Inputs:**

- Number of facilities with requisite personnel and skills, e.g., number of workers employed with required education level
- Number of supplies procured, e.g., number of family planning methods received from donors

Select performance standards. For each indicator select a "target." These standards are compared with actual performance. For example, your target for immunization coverage may be set at 70 percent. You would compare your actual coverage to that target.

Choose the information sources and the data-gathering procedure. Most of this information will probably come from existing or modified sources such as treatment data, logistics records, and activity reports. In some cases, a new indicator will be added to an existing form. Whenever possible use the existing data gathering, compilation, and reporting system.

## **Stage 2: Implementing**

- Collect the data. When a new form is developed or an existing form is substantially modified, pre-test it on a small scale. Data collection should be carefully supervised to ensure that the information is accurate and complete. This often involves training and re-training field staff that collect and compile data.





### WORKSHEET FOR COMPARING ACTUAL PERFORMANCE WITH ITS STANDARD OF PERFORMANCE

Components/ Indicators	Actual performance	Standard performance	% Achieved of standard	Action to be taken
<b>PHC services</b>				
1. No. HH with latrine	400	500	80%	Organise teams to construct latrines
2. No. of mothers who can interpret GM card	600	600	100%	Increase target to 750
<b>Management</b>				
1. No. of CHW's with improved performance	15	13	115%	Provide incentives for performance

- Tabulate and analyse the data. Compute the results by comparing the actual with the performance standards, i.e., divide the monitoring indicator by the standard. For example, if the performance target for community activities was 50, and 30 were actually completed, the performance achieved would be only 60 percent. You can use the computer files in modules 4, 6 and 7 to process your data quickly.

Look for discrepancies between the input and output indicators and the targets; trends over time that are increasing or decreasing; and administrative areas or facilities that fall substantially above or below the norm for performance.

- Present the results of monitoring to those involved in service management and delivery, and take action. Each monitoring report should include actions to be taken and the staff responsible for implementing those actions.

### Stage 3: Reviewing

- Indicators should be reviewed periodically to determine if they should be dropped, modified, or continued. When monitoring results are not being used, you should consider discontinuing the indicator.
- In most cases, monitoring data are not effectively utilised because managers have not been trained and supervised to analyse the data and to develop an action plan. Thus you should determine if information is not being used because it is no longer useful or because managers have not been trained, directed, or supervised.
- If your original intention was to monitor indicators over a short period of time in order to ensure that activities were implemented as planned, you may decide to incorporate one or two key indicators into the routine monitoring system.





A laboratory technician at the Kakamega General Hospital in Kenya helps to evaluate the comparative advantages of cereal based ORT in comparison with standard ORS solution to prevent death from the dehydration caused by diarrhoea

Photo by Jean-Luc Ray for AKF



## Introduction

Monitoring is the periodic collection and analysis of selected indicators to enable managers to determine whether key activities are being carried out as planned and are having the expected effects on the target population. Monitoring provides feedback to project management in order to improve operational plans and to take corrective action. Indicators can be used to: measure achievement of targets; assess changes/trends in health status; compare the level of achievement between working areas or project sites; and identify currently under-served areas. An indicator is defined as an indirect measure of an event or condition. For example, weight-for-age is an indirect measure (indicator) of a child's nutritional status.

Although most managers already have a monitoring system, it may not allow them to monitor some of the PHC and management services that they deem to be especially important. This module is designed to fill that gap. Managers can use it to select a limited number of indicators from lists that have been compiled for each PHC service and management service. Guidelines in the module explain how to design and implement simple monitoring "systems" using these (or other) indicators.

Most PHC managers have to oversee a large number of programme services. In this series of modules we have divided those services into two categories: PHC services (immunization, antenatal care, etc.) and management support services (planning, supervision, etc.).

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### Definitions

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## Types of indicators to be monitored

It is helpful to classify indicators into broad categories and then to select one or two from each category so that key parts of the activity can be monitored and overlap can be avoided. PHC MAP uses a "systems framework" to describe PHC programmes in broad categories of inputs, processes, outputs, effects, and impacts (see Module 1).

This module suggests some generic indicators for four of these categories: **inputs**, resources needed to carry out the programme; **outputs**, the services or goods produced by the programme; **effects**, the knowledge, attitude, and behavioural changes that result, including coverage; and **impacts**, changes in health or fertility status due to the effects. By "generic," we mean indicators that can be applied to most PHC services. This module focuses on monitoring inputs, outputs, and effects. Generic impact indicators for mortality, morbidity, disability, and fertility are included, but the user who wants to monitor these should consult *Module 4, Surveillance of morbidity and mortality*.

The recommended generic indicators are summarised below. Appendix A provides an annotated list of suggested indicators for each of the specific PHC services. Appendix B provides a similar annotated list for each of the specific PHC management support services. Appendix C provides a separate list of annotated PHC impact indicators to monitor mortality, morbidity, disability, and fertility. Appendix D is a summary list of PHC service and management service indicators with cross-references to other PHC MAP modules.

### PHC service indicators

Since the primary purpose of this module is to monitor PHC services, the lists of generic indicators start with effects to encourage linking the effect with the outputs and inputs needed to carry out that activity. Table 1 illustrates this linkage. Obviously, not every PHC service needs to be monitored with all of the generic indicators. Indicators should be selected to fit specific needs.

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#### Generic indicators

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**Table 1: Generic indicator categories for PHC services****Effects**

Behaviour (also called coverage)  
Knowledge and skills

**Outputs**

Utilisation of services  
Quality of care  
Contacts, visits  
Access to services  
Unit costs

**Inputs**

Availability of personnel, supplies, equipment, funds

**PHC service effect indicators**

Effects are changes in knowledge, skills, attitudes, and behaviour that result from the PHC service. Since attitudes are very difficult to measure, three types of indicators are emphasised: knowledge, skills, and behaviour, or practice.

**Behaviour** indicators tell whether the target group has done or is doing what is needed to be protected by the PHC intervention. You can also call this **coverage**, which is a measure of the proportion of the target group that is following a prescribed behaviour or practice, e.g., using contraception. In PHC, coverage also refers to the proportion of the target group that has received the prescribed treatment in a correct and complete manner, e.g., fully immunized. Coverage measures usually include all people in the target group in the denominator, including those who do not receive services from the PHC programme. Thus, the two sub-categories of behaviour indicators are:

- **Practice**, e.g., proportion of eligible couples using modern contraceptives
- **Treated**, e.g., proportion of children under five years of age who are fully immunized

**Knowledge** indicators tell the manager whether mothers have understood key health education messages.





**Skill** indicators tell whether they know how to perform important health tasks.

- **Knowledge**, e.g., number or percent of TB patients who know why it is important to complete the treatment for tuberculosis
- **Skills**, e.g., number or percent of mothers who can correctly administer ORT

Record systems that are based on complete household registration may be able to provide some data on effects (see Module 3) but, by and large, this information is rarely available from service statistics and will usually require a community survey (see Module 2).

Usually, effects data should not be collected frequently since significant changes would not normally occur rapidly. Furthermore, data collection can be time-consuming and expensive. Annual monitoring of effects may be sufficient, unless changes in strategy are being implemented and short-term monitoring is being carried out. Analysis of effects would look at changes over time, comparisons with project norms, comparisons among health centres and breakdowns of distributions by characteristics such as age, parity, socio-economic status, and geographic area.

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**Annual  
monitoring  
of effects  
sufficient**

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### **PHC service output indicators**

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Outputs are the services and products that the PHC programme generates with its resources. They are what lead to the effects on mothers or children.

Outputs can be seen as the immediate result of PHC processes, or services. The result of a process can be measured as an output. For example, the process of visiting pregnant women can be measured as the number of pregnant women visited, an output.

The most important types of outputs in PHC are: **utilisation** of the service; **quality** of the service provided; **contacts** of those in need of, or eligible for, the service; and **access** to the service. The generic indicators we suggest fall into these four sub-categories.





**Utilisation:** To have an effect on knowledge, skills, and behaviour, PHC services must be utilised. This set of indicators tells the manager whether they are utilised and, if so, how.

Utilisation is the initial link between the effort that goes into providing a service and the improvement in health that should result from using the service. Utilisation indicators are important for both outreach and clinical services. Depending on the intervention, utilisation can be expressed in several ways. For services which require a long period of constant contact, such as family planning, tuberculosis treatment, and growth monitoring, it may be useful to distinguish between those ever using (number of acceptors, number enrolled, number registered) and those currently using (number of current users, number of active cases). Useful negative indicators include the number of drop-outs, past users, and inactive users.

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**Utilisation  
indicators  
important**

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- **Acceptors/users**, e.g., number or percent of children enrolled in growth monitoring
- **Continuation**, e.g., number or percent of current users of family planning
- **Drop-outs**, e.g., number or percent of ANC drop-outs

Information on utilisation can usually be obtained from clinic and outreach reports as well as community surveys.

The distribution of users can be compared to targets and broken down by geographic area, age, sex, ethnic group, socio-economic status, etc.

**Quality of care:** Information on the quality of service delivery is often important to managers for two reasons. First, poor service quality can lead to drop-outs, low service utilisation, and poor knowledge, attitudes, and practice. Second, gaps in service quality imply that staff training and supervision may be required. Quality indicators that managers will usually want to monitor are in diagnosis, education, treatment, and counselling.

- **Diagnosis**, e.g., number or percent of health workers who screen fever patients for signs of other serious illnesses, e.g., meningitis, pneumonia, etc.
- **Education**, e.g., number or percent of women who receive correct information on immunization schedules



- **Treatment**, e.g., number or percent of babies weighed correctly
- **Counselling**, e.g., number or percent of health workers who counsel mothers on nutrition needs of their children

Data for these indicators are rarely collected routinely. The best information usually comes from direct observation of health workers and can be compiled from service delivery quality assessment checklists (Module 6). For some specific indicators, information may be available from health centre registers or health cards. Exit interviews may also provide the necessary information.

Analysis typically focuses on health worker performance over time, comparisons with project norms, and comparisons among health centres.

**Contacts:** Services may not be utilised if target groups are neither informed nor motivated to use them. This type of indicator tells the manager the proportion of the target group that is being contacted or visited by the programme, usually through outreach workers, group health education, or mass media. Such contacts, however, do not necessarily result in utilisation.

Low contact rates may indicate that health workers are not visiting all households in their catchment areas, are visiting them too infrequently, or are not adequately conveying educational and motivational messages. This indicator is especially important for outreach services and can be further refined to focus on **high-risk** women and children. That is, the programme could give priority to those most in need of services by scheduling appropriate outreach and clinic sessions.

- **Contact**, e.g., number or percent of households contacted by malaria workers
- **High-risk contact/visit**, e.g., number or percent of malnourished children followed up by health workers

Data can come from clinic records, outreach worker and supervisor records, and community surveys.

Analysis is similar to that already described. The distribution of people contacted or visited can be compared to

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### High-risk contacts

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targets and broken down by geographic area, age, sex, ethnic group, socio-economic status, etc.

**Access:** This type of indicator will assist managers to determine whether the services are accessible to the intended target groups. This is likely to be of greater concern in rural and remote areas than in urban areas. But even in urban areas, PHC services may not be accessible due to distance, schedules, costs, and cultural obstacles. Indicators in this group are particularly important for preventive services and for outreach programmes covering large catchment areas. Access indicators are often critical for monitoring new or revised services, since people must have access to a service, before they can use it. Accessibility can be measured in terms of distance from a service, time required to get to a service or the number of service sessions held in a given time period.

- **Physical distance,** e.g., number or percent of population living within five kms of a health facility
- **Time,** e.g., number or percent of population within a 15-minute walk of clean water
- **Frequency of service:** e.g., number of sessions held per week

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**Access  
indicators**

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Access indicators often require first mapping out the catchment area to determine the proportion of the target group that is and is not being served (Module 3). How frequently these indicators should be monitored depends on how quickly access can be expected to change. In many cases, monitoring on an annual or semi-annual basis would be sufficient. Data on accessibility can be collected from community surveys, health session activity reports, and outreach worker reports.

Analysis of accessibility data usually involves examining the distribution of the target group served and unserved by geographic distance from the service site. This information can also be gathered by a population-based survey (Module 2). The distribution can be compared to targets and broken down by geographic area, age, sex, ethnic group, socio-economic status, etc.





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## PHC service input indicators

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Inputs are the resources needed to carry out the project's services. They enable the project to produce its outputs. Most PHC services require certain essential resources. In addition to personnel, nurses, physicians, outreach workers, volunteers, community leaders, etc., there are often key supplies that are needed to provide the service, vaccines for immunization, scales for growth monitoring, contraceptives for family planning. And for some services, it is imperative to have the proper equipment, e.g., X-ray machines for TB, vehicles for outreach, refrigerators for immunization.

Managers and staff usually know which resources are essential and which are the most likely to be unreliable. If problems are being experienced or are anticipated, it may be useful to monitor the availability of these key resources. We suggest formulating the input indicators in the **negative** to trigger immediate action. The most common input indicators would monitor the availability of personnel, supplies, equipment, and funds.

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### Monitor essential inputs

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- **Personnel**, e.g., number of trained TBAs; population per active CHW
- **Supplies**, e.g., number or percent of health centres without sufficient ORS packets
- **Equipment**, e.g., number or percent of outreach workers without operational motorbikes)

Potential information sources for these indicators include logistic supply records, stock inventory forms, supervisor reports, and CHW reports. An item could be added temporarily to these or other routine reports if it is not already available. Data can also be collected with Module 6 and 7 checklists. If the resources are supposed to be available in households, e.g., growth monitoring cards, ORS packets, the required data could come from home visit forms or could be included in a community survey (Module 2).

Analysis and interpretation of input indicators are very straightforward. If supplies are found to be inadequate, there is a problem. This information should stimulate the obvious solution of supplying the needed inputs. If the cause of the



shortage is unknown, this should trigger further investigation into the logistics system. The logistics checklist in Module 7 could be of help in that case.

### PHC management

Indicators for the eight management services can also be categorised as **effects**, **outputs**, and **inputs**. Table 2 illustrates this linkage.

**Table 2: Generic indicator categories for PHC management**

#### Effects

Staff behaviour (and "coverage")  
Staff knowledge, skills

#### Outputs

Services or activities completed  
Frequency of management services  
Quality of management services

#### Inputs

Availability of trained personnel, supplies, information  
Guidelines/protocols

### Management effect indicators

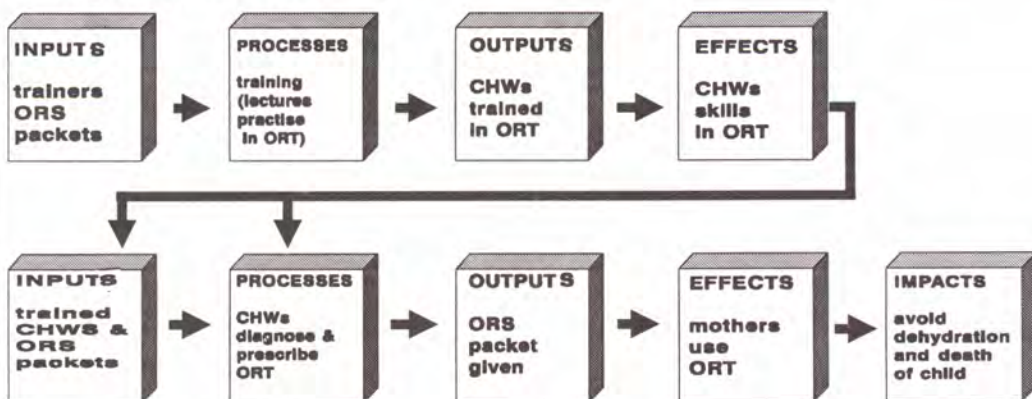
The management services are designed to support PHC service delivery. Thus, the effects of the management services can be measured in terms of the knowledge, skills and behaviour of service providers and support staff. Figure 1 shows how management services affect PHC services. Appendix B lists effect indicators you should consider:

- **Staff behaviour**, e.g., number or percent of PHC staff who follow travel guidelines
- **Staff knowledge**, e.g., number or percent of trained PHC providers who know how to prepare a work plan
- **Staff skills**, e.g., number of PHC nurses who received training in the correct use of an autoclave and can correctly use autoclave equipment



**Figure 1: A systems diagram of the relationships of management services and PHC services**

### Management services



### PHC services

#### Management output indicators

Outputs are the services and products that PHC management services generate with their resources. There are basically three types of management output indicators:

- **Services or activities completed**, e.g., the number of PHC providers trained
- **Frequency of activity**, e.g., the percent of facilities completing quarterly reports
- **Quality of management activity**, e.g., the number of supervision visits that included review or follow-up on problems from previous visit.

Information for these indicators can often be obtained from review of programme plans, interviews and discussions with health workers and managers, review of supervision and training reports, personnel records, account books, stock records, and activity plans. Module 7 provides a more detailed description of the various data sources for these indicators. As with PHC service indicators, the analysis will





typically focus on comparisons over time, comparisons with performance standards, or comparisons among health units.

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### Management input indicators

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Inputs are the resources needed to carry out the management services. We have suggested a few that often pose problems:

- **Personnel**, e.g., the number or percent of PHC providers recruited with requisite skills
- **Supplies**, e.g., the number of IEC materials received for training outreach providers
- **Information**, e.g., the number of monthly service reports received from private physicians and midwives
- **Guidelines/protocols**, e.g., the number of supervisors with the written protocols for supervision.

Management may come from outside the PHC organisation or from another department inside the organisation. Information for these indicators can be obtained from interviews, observations, personnel records, and programme plans. Again, Module 7 discusses information sources and use of this information.

### How long should you monitor PHC activities?

PHC managers carry out one of two types of monitoring, which we will call "routine" and "short-term."

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#### Example: Thailand

A simple monitoring system was put in place at the village level in a north-eastern province to track coverage of six child survival interventions (immunizations, growth monitoring, ORT, antenatal care, family planning, and water and sanitation). This monitoring system was based on "neighbourhood health inventory cards." Data were collected by local village health volunteers, and cards were displayed at the volunteer's home to make it easy for the community to track progress. Supervisors collected the data every two months, did quick on-the-spot analyses, provided feedback to the volunteer and community leaders, and forwarded the results to the province health office for data entry and aggregate analysis.

This system enabled PHC administrators, health workers, and community leaders to remain informed about the PHC services and achievements made in each village.

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**Routine monitoring** involves compiling information on a regular, ongoing basis for a core set of indicators. The number of indicators should usually be kept to a minimum but should still provide the manager with sufficient information to track progress. Routine monitoring can be used to identify where programme implementation is or is not proceeding as planned.

**Short-term monitoring** is done for a limited period of time and usually for a specific activity. Often when new activities or processes are implemented, managers need to know whether they are being implemented as planned and whether they are having the desired effect. Managers normally use this information to make adjustments in the new intervention. Once implementation is underway, key indicators are incorporated into routine monitoring.

Short-term monitoring is also used when managers have identified a problem in the delivery of inputs and services

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### Example: Zaire

A health zone manager set up a special monitoring system to assess the effectiveness of a solution he had implemented to address a nutrition problem. He found that mothers of malnourished children often left growth monitoring sessions without understanding their child's nutritional status and what they should be doing about it at home. He believed that the cause of this problem was that the health workers had insufficient time to provide counselling to mothers. Time spent with mothers averaged only one minute. As a consequence, he decided to reorganise the growth monitoring sessions. Children were weighed by community volunteers who performed a triage, directing malnourished children to be seen by the nurse. This should have allowed the nurse to spend more time counselling those mothers with children most in need of attention. The manager monitored the effects of his strategy by collecting information on whether the new triage approach was being properly implemented, the average amount of time that nurses spent with mothers of malnourished children, and mothers' knowledge of their children's nutritional status and of activities they needed to carry out at home. He found that the time per mother for counselling tripled, and mothers' knowledge upon leaving the growth monitoring session improved substantially.

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and additional information is needed. Monitoring in this case is used to examine a problem and pinpoint gaps in service provision and management support services.

There can be a complementary relationship between routine and short-term monitoring. For example, problems that have been identified through routine monitoring can





lead to a special intervention to solve those problems. A short-term monitoring system might then be set up temporarily to make sure that the intervention is effective. Once that has been achieved, short-term monitoring may be reduced, eliminated, or partially incorporated into the routine monitoring system.

## **Keep it straightforward and simple (KISS)**

In designing a routine or short-term monitoring system, a few guidelines should be considered: 1) select only key indicators that will be used by managers and other key users; 2) do not overburden staff by collecting too much data; 3) provide feedback in a timely manner; 4) use a reporting format that facilitates data interpretation and action.

## **Limitations of service monitoring**

Some important PHC activities may be difficult to monitor. For example, it is difficult to collect data about the content and effectiveness of services provided by CHWs at the household level. Collecting information for some indicators, such as changes in infant and maternal mortality, may not be feasible, especially over a short period of time. For this reason, we suggest focusing activity monitoring on input, output, and effect indicators to determine whether a PHC service or management service is being carried out as planned. Community surveys (see Module 2) can also be used periodically to assess the effects and impact of these services on knowledge, behaviour, and health status. A surveillance system (see Module 4) can be utilised to track mortality, morbidity, disability, and fertility, and to investigate their causes.

Although the indicators suggested in the appendices include some of the most common and useful indicators currently used in PHC, it is expected that you will modify them to meet the specific needs of your programme.

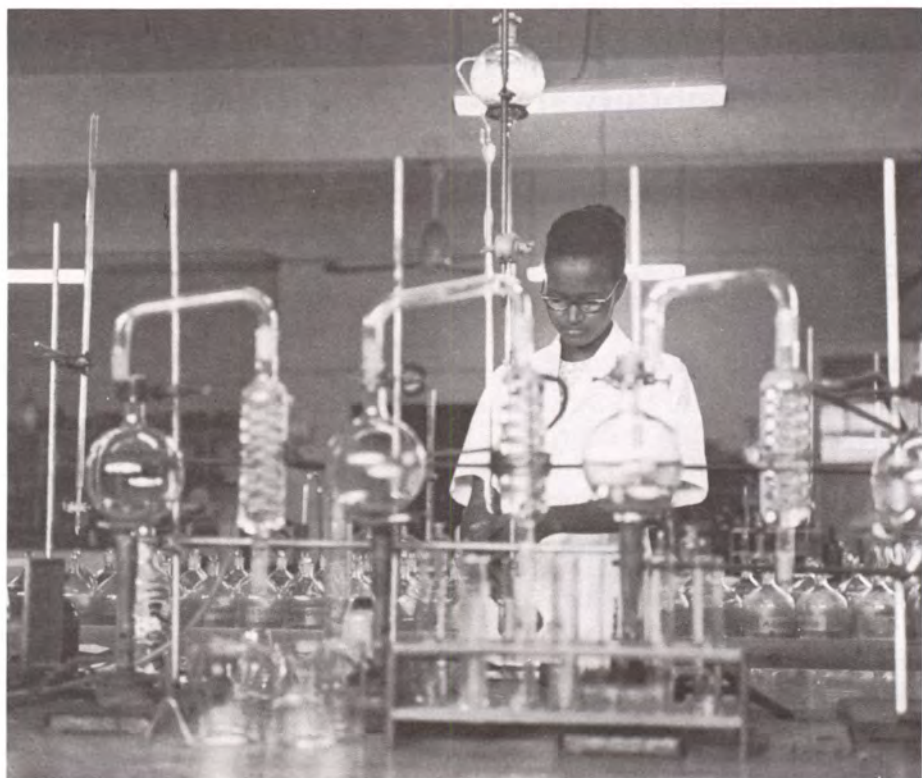
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**Monitoring  
mortality  
difficult**

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The monitoring and evaluation of programmes can help identify health research priorities. In Trinidad, a medical laboratory conducts research on new methods of family planning and ways of overcoming infertility

Photo by E. Rice for WHO



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## Monitoring procedures

Nine steps to activity monitoring are listed below and are described in detail later in this guide. The first four cover the planning stage and seek to ensure that the information collected is relevant, specific, feasible to collect, and can be analysed. The next four cover the implementation of monitoring: collecting information, compiling and analysing it, reporting, and using the results for management action. The ninth step suggests taking a look at the system periodically to decide whether to continue monitoring activities at the current level.

### Steps in activity monitoring

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#### Planning

- Step 1:** Specify the monitoring objectives
- Step 2:** Decide on the scope of the monitoring
- Step 3:** Select the indicators and performance standards
- Step 4:** Choose information sources and develop data collection procedures

#### Implementation

- Step 5:** Collect the data
- Step 6:** Tabulate and analyse the data
- Step 7:** Present the findings
- Step 8:** Take appropriate action

#### Assessment

- Step 9:** Decide whether to continue monitoring
- 



These steps assume that the user will normally want to select a limited number of indicators to monitor one or more PHC services for a short period of time. However, the same process would be followed by those who might want to monitor all PHC services on a routine basis. Those who already have an MIS may find it useful to review the steps to determine if improvements can be made in their system, for example, by reducing the number and frequency of collection of indicators or by streamlining the current system.

## Step 1: Specify the monitoring objectives

The first step in designing a monitoring system, no matter how small, is to determine what services are going to be monitored, for what purpose, and for whom. Different users will have different information needs and purposes. For example, a donor or board member may only be interested in monitoring programme coverage on a routine basis to determine whether to continue funding. On the other hand, a manager may want information about service inputs and outputs, largely to make sure that the PHC services are being carried out as planned, and to make adjustments if they are not.

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**What  
Why  
Who**

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The following worksheet is used to clarify: 1) **what** services will be monitored, e.g., immunization, logistics; 2) for what **purpose**, e.g., routine or short-term information; decisions about continuing or modifying the service; and 3) **who** will use the monitoring results, e.g., manager, community, or health workers.

### • Activities

If you have completed Module 1, you have already set priorities among your monitoring information needs. You should start by reviewing the PHC and management services that you selected. If you have not completed Module 1, find the lists of the most common PHC services and management services (both in Module 1 and the PRICOR Thesaurus), and use these lists to decide which services to monitor. Appendices A, B, and C of this module can be used as references, as well. In Modules 6 and 7, each PHC service and management support service is broken down into major activities and tasks. These lists might be of use to those who are





interested in monitoring only a specific part of a service. After you have reviewed these modules, rank each PHC service and management service on a scale of 1 to 10 (highest) to determine what should be monitored. Next, determine if you are going to monitor input, output, or effect indicators for these PHC and management services.

- **Purpose**

In specifying your purposes, you should clarify **why** you need information in each area.

Many monitoring systems merely produce data for general information, often because it is "required," nothing more. It is quite possible that the user(s) only want to know what the PHC services are doing (e.g., how many people were served this month, what were the major illnesses reported). If this is the intended use of the data, then data collection may be quite simple. Only numerator data may be needed. For example: 45 children vaccinated; 13 CHWs trained.

In other cases the user may want to know whether a service is being performed as planned. A judgement about the effectiveness of that service can be made based on a comparison between what was planned and what actually happened, such as in the case of special monitoring. This will require collecting numerator and denominator data, for example: 45 of 60 eligible children vaccinated (75%); 13 of 15 CHWs trained (87%).

Finally, if specific decisions are to be made based on the results, then "decision rules" should be determined at the outset so that the user will be assured of getting enough data to make the decision, for example: close the health centre if attendance falls below 100 visits per month and revenues are less than Rp 3,000.



- **Users**

Identifying the users is important and worth checking to make sure that there are no misunderstandings and that the information collected will be of real use. The users should be involved in the selection of the indicators, and must be able to explain how the information will be used. If there are multiple users, their various needs may have to be negotiated.

The following worksheet may help you summarise the monitoring objectives of each user.

WORKSHEET FOR SPECIFYING THE MONITORING OBJECTIVES					
What to monitor	Purpose (routine, R, or short-term, S)	Internal users		External users	
		Providers	Managers	Donors	Others
<b>PHC services</b>					
EPI (effects)	measure coverage of immunization (r)	Nurses Physicians	Clinic	AKF	MOH
ORT (outputs)	determine no. clients served (s)	Physicians Director	Clinic	CIDA	
ANC (inputs)	determine availability of TT (r)	Nurses Director	Clinic	USAID	MOH
<b>Management</b>					
Training (effects)	determine % of staff trained (s)	Trainers Director	Programme	CIDA	
Planning (effects)	determine plans produced/distributed (s)	Planners	Director of planning	UNFPA	BKKBN
Logistics (inputs)	measure purchases of FP methods (r)	Purchaser Director	Logistics	USAID	



## Step 2: Decide on the scope of the monitoring

After specifying the purpose of monitoring, managers need to determine how broad the monitoring should be: what geographic area will be included in the monitoring (the entire region, a sub-district); which facilities or sub-projects are to be included; which staff or workers will be included in selected facilities; and how long monitoring will continue.

### WORKSHEET FOR SPECIFYING THE SCOPE OF MONITORING

- |    |   |
|----|---|
| 1. | What geographic area will be covered? <i>Kisumu and Mombasa Districts</i>                         |
| 2. | Which facilities or sub-projects will be monitored? <i>Clinical services</i>                      |
| 3. | Which personnel (managers, providers & volunteers) will be selected? <i>Physicians and nurses</i> |
| 4. | How long will the monitoring continue? <i>Six months</i>  |

It may not be necessary to monitor all of the service facilities or staff in a programme area. For routine monitoring, it may be a good idea to test the new monitoring procedures in a few areas before instituting them throughout the project area. For short-term monitoring, it may be sufficient to limit the monitoring to: a) low performance facilities, sub-projects, or staff, or b) facilities or staff from each geographic area.

Just as important as the scope of the monitoring is the duration of data collection and analysis. The duration will usually depend on whether the monitoring is routine or short-term. Routine monitoring procedures usually continue for an indefinite period, or at least until the user(s) determine that the data are no longer needed. Short-term monitoring, as the name implies, is more likely to be used for evaluation and decision making and to have a limited duration. Duration would be determined by the deadlines the user(s) have (or set) for making a judgement or decision about the activity being monitored. For example, if a new case-finding procedure is being tested, the manager may want to know whether it is effective before expanding it to the whole programme. The manager might set a three- or six-month test period, after which a decision can be made to continue testing,

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**Routine or  
short-term**

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expand the procedure, or drop it. By setting a specific time frame for short-term monitoring, the project can avoid continuing data collection beyond its utility.

### Step 3: Select the indicators and performance standards

This module emphasises **input**, **output** and **effect** indicators. Appendices A and B provide extensive lists of broad and narrow indicators for each PHC service and management service. The user should examine these lists and choose a limited number of indicators for inclusion in the monitoring system.

It is expected that most programmes will need to modify the indicators presented in this module. Field tests have shown that the most typical modifications are in: 1) the definition of the target group (for example, children under age 2, under age 4, under age 5, between 12 and 60 months); 2) terminology (for example, "diarrhoea" may be defined differently in different cultures); and 3) phrasing, to make the indicator culturally acceptable.

Although the indicators listed in Appendices A and B are thought to include most of those that PHC managers will need, there may be additional indicators that some programmes will need to develop. The worksheet on the next page can be used to specify PHC service and management indicators, formulate the indicators, set performance standards, and determine the frequency of collection.

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**Modify as  
appropriate**

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#### Formulation

Indicators can be formulated in the following ways:

- **Count:** The simplest type of measure; just count the number of events or objects. For example, 56 visits, 432 CHWs, 9,765 children immunized.
- **Rate:** A measure of the frequency with which some event occurs, such as household visits/day.
- **Ratio:** Two numbers related to each other in a fraction or decimal, such as the number of ANC visits made per pregnant woman (3.2:1) or the number of trained TBAs per population (1:490).
- **Proportion:** A special type of ratio expressing a relationship between a part and the whole. For example, the



3,250 children immunized out of 5,000 ( $3,250/5,000 = 0.65$ ). The numerator is the portion of the total, the denominator is the total.

- **Percentage:** A proportion multiplied by 100. For example,  $(3,250/5,000) * 100 = 65$  percent of eligible children immunized.

WORKSHEET FOR SELECTING INDICATORS AND STANDARDS			
Indicators	Formulation	Standards	Frequency
<b>PHC services</b>			
Effect	% of households using latrines	50%	annually
Output	No. of mothers who can interpret GM card	600	6 months
Input	% of training sessions with materials	80%	monthly
<b>Management services</b>			
Effect	% of CHWs with improved performance	30%	quarterly
Output	No. of training sessions with clinic staff	20	monthly
Input	No. of FP methods received from donors	20,000 CYPs	quarterly

**Performance standards:** In addition to selecting the indicators, the manager should set performance standards for each indicator. This step is often overlooked, but it is very important, especially for where the objective is to make an evaluative judgement or decision. If performance standards are not set at the outset, then it will be impossible to determine whether the activity has been successfully carried out or has been effective. Use the above worksheet to define standards for each indicator.

A performance standard is often called a "target" and is usually quantified. For example, suppose that the activity to be monitored is growth monitoring and three indicators are selected: number of GM sessions held, number of children weighed, and percentages of mothers counselled. "Targets" need to be set for each of the indicators. How many sessions should be held during the monitoring period; how many children should be weighed; what proportion of mothers should be counselled? Only if these "performance standards" are set will it be possible to reach agreement on whether performance is acceptable.

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**Standards  
are targets**

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These "standards" are the denominators in the computation of performance. An indicator involves a numerator (what was achieved or the actual performance) and a denominator (the target or planned performance). For example:

$$\frac{\text{No. GM sessions actually held} = 20}{\text{No. GM sessions planned to be held} = 25} * 100 = 80\%$$

In immunization coverage, a common objective is to fully immunize 80 percent of the target population. That "standard" is the denominator. The numerator would be the actual proportion of eligible children immunized, say 65 percent.

The performance would be:

$$\frac{\text{No. of eligible children immunized } 3,250}{\text{No. of eligible children to be immunized } 5,000} * 100 = 81\%$$

The result shows that the programme met 81 percent of its target. It also shows that actual coverage was 65 percent (3,250/5,000), or 15 percentage points below the target.

**Frequency of data collection:** Information for some indicators is easier to collect than for others and frequency of collection should be kept to a minimum so as not to overburden staff and raise costs. Frequency is important to consider in planning because each round of data collection involves effort that may reduce the amount of time available for services and other important management services. If it is important to know exactly how many times an event happened, e.g., how many children were immunized, how many latrines were built, then the data would have to be collected continuously. But if the objective is to determine if a procedure is being carried out as expected, e.g., are CHWs counselling mothers properly, are there enough ORT sachets on hand, then the data can be collected at periodic intervals. However, data collection and examination of results do not have to occur simultaneously. The users should also determine how often they want to examine the results. For some users, an annual or semi-annual assessment may be enough. Others may want weekly reports. There are no hard and fast rules about frequency. It depends on the user's needs.

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**Minimize  
data  
collection**

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## **Step 4: Choose information sources and develop data collection procedures**

For each indicator, determine the source and the procedure for collecting monitoring data. For many indicators, more than one source could provide the necessary data. The following worksheet can be used to specify sources and techniques for collecting data for each indicator.

The choice of information sources will depend on the manager's existing information system. As such, most of the data needed for monitoring will probably come from existing

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### **Techniques for monitoring PHC services**

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In addition to routine records, several other techniques are available for gathering data for monitoring purposes.

#### **Observation**

Direct observation at the site of service delivery offers the opportunity to collect information on health worker performance and on the presence of inputs. For many indicators, this is the most reliable source of information, although it also requires a caveat: people tend to improve their performance when they are being watched, and thus, the experience may not be representative of what routinely happens. Observation data can be collected during supervisory visits, home visits, or household surveys.

#### **Rapid surveys**

Rapid surveys provide information on the population of users and non-users. It is particularly useful for information on coverage and on home treatments, as well as mothers' knowledge. Module 2 presents a whole series of rapid household surveys. These models can be used to carry out comprehensive surveys, or a few questions could be extracted on a specific topic and used in a small, quick survey.

#### **Exit interviews**

Exit interviews involve asking questions of patients as they are leaving the clinic or session. This type of interview offers the opportunity to collect information on what the health workers did and how well the patient/mother was able to absorb the information given. This information source can be incorporated into routine supervisory visits as well as carrying it out as an independent activity.

#### **Interviews with health workers**

Much information can be gained just by talking to health workers, whether in structured individual interviews, informal conversation, or focus group discussions. It offers a quick, inexpensive way to get information on such things as problems with inputs, knowledge about treatments, and identification of high-risk patients. This source offers sensitive information; if a problem is identified this way, it is most likely a real problem. However, if no problems are identified, that does not mean they do not exist. The information generated from this information source may require verification through routine records or direct observation.

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**Use existing  
sources**

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sources. Routine records include the information sources that make up the health information system, such as logistics records, treatment registers, individual patient records, activity reports, and population-based records, including family files. The form of these routine records will vary from programme to programme, but the first place to look for information is among what is currently being collected. Many input indicators could be derived from the routine record system or by making a few modifications of routine records so that they produce the specific information desired. Some process/output indicators could also be calculated from routine records. For example, reviewing treatment records or the treatment register could provide information for the indicator: % of health workers using antibiotics only in cases of pneumonia, strep throat, and otitis.

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**Modify  
current  
forms**

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If the needed data are not already collected, it is often possible to modify one of the current forms so that they will provide the desired information. This may require nothing more than a slight change in the wording of the current form. For example, change "number of ORS packets distributed" to "number of mothers of children under age 5 given ORS packets." In other cases, a new item could be added to an existing form. Example: add a question to the CHW's home visit register to ask mothers, "Do you have a growth monitoring card for your child?" Or instruct supervisors to ask CHWs a few key questions during their routine visits, for example: "Have you been trained this past month how to counsel mothers about side effects from immunizations?"

In some cases, it may be necessary to develop new instruments to collect the data. Modules 2, 6, and 7 provide guidelines, examples, and instruments that can be adapted to fit monitoring needs. They describe the most common data collection approaches: how to collect new data from surveys of mothers, from observations of PHC services, and from reviews of available records and reports.





Informal interviews and discussions with health workers, administrative staff, community leaders, and others may be a practical way to collect general impressions of how the programme is going, if more formal and specific data collection procedures cannot be afforded. Time and financial constraints must be taken into account when choosing where and how to obtain monitoring data.

### WORKSHEET TO SELECT DATA SOURCES AND TECHNIQUES

<b>Data source:</b>	<b>Records</b>	<b>Provider client interface</b>	<b>Client</b>	<b>Health worker</b>
<b>Data collections Technique:</b>	<b>Review</b>	<b>Observation</b>	<b>Survey/ Interview</b>	<b>Interview</b>
<b>PHC services indicators</b> % HH use latrines No. mothers who can interpret GM card % of training sessions with materials <b>Management services indicators</b> % of CHWs with improved performance No. of training sessions with clinic staff No. of FP methods received from donors	service data   supervision records service records logistic procurement records		rapid survey rapid survey	

## Step 5: Collect the data

When new data monitoring forms or instruments are developed, the user should first pre-test them on a small scale. This includes the selection and training of data collection personnel and the establishment of procedures for data collection supervision and processing. Module 2, in particular, includes some guidelines on data collection, including pretesting, training of interviewers, and supervision. Module 4 presents guidelines for establishing an impact surveillance system. Modules 6 and 7 also include relevant suggestions for collection of input and process data. The following





worksheet can be used to specify responsibilities for data collection, supervision, and processing.

<b>WORKSHEET FOR SPECIFYING DATA COLLECTION, SUPERVISION AND PROCESSING</b>			
<b>Staff</b>	<b>Responsibility</b>		
	<b>Collection</b>	<b>Supervision</b>	<b>Processing</b>
Health Worker	Collect	Supervise health worker Use data to manage	Send to district
Clinic Staff	Collect		Send to district
District Manager	Receive		Compile
MIS Manager	Receive		Process and report

Again, the easiest approach would be to collect the needed data through the existing system. This would eliminate the need to set up a special data collection effort. CHWs, supervisors, physicians, and others could easily collect a small amount of additional information, especially if it is only for a limited period of time. However, it will probably be necessary to carry out at least minimal training to ensure that workers understand the changes in the existing system and its purpose.

### **Step 6: Tabulate and analyse the data**

The monitoring data should be tabulated and analysed to meet the objectives and scope specified in steps 1 and 2. Step 3 showed how to compute the results by comparing actual with planned achievement. The following worksheet can be used to specify the actual performance observed, the performance standard or target, and the percent of the standard achieved. Most tabulation will be straightforward counts and/or percentages.

There are several ways in which data analysis can facilitate interpretation of results. You can identify problems by examining frequency distributions (Table 3), by comparing the actual values of the indicators to the performance standards or targets (Figure 2); by comparing performance between health units or administrative districts (see Figure 4); and by comparing administrative units over time (see Table 4).



WORKSHEET FOR COMPARING ACTUAL WITH STANDARD PERFORMANCE				
Components/ Indicators	Actual performance	Standard of performance	% of standard achieved	Action to be taken
<b>PHC services</b>				
1. Proportion HH with latrine	0.40	0.50	80%	Organise teams to construct latrines
2. No. of mothers who can interpret GM card	600	600	100%	Increase target to 750
3. Proportion of training sessions with materials	0.55	0.80	69%	Secure funding to purchase materials
<b>Management service</b>				
1. Proportion of CHWs with improved performance	0.35	0.30	116%	Provide incentives for performance
2. No. of training sessions with clinic staff	12	20	60%	Provide transport and materials for training
3. No. of FP methods received from donor	10,000 CPY	20,000 CPY	50%	Secure additional methods locally

The data can be displayed in various ways. The most common are **lists**, **tables**, and **graphs**. Table 3 shows the number and percentage breakdown of selected pregnancy-related indicators for a six-month period.

The following examples are taken from a semi-annual report of a PHC programme in Bangladesh.<sup>1</sup>

Figure 2 shows data in graphic form compared to standards or targets set for the same periods.

The next example (Figure 4), shows how data from different health centres can be compared. These data are of Vitamin A-capsule coverage in 14 disaster-prone areas in Bangladesh.<sup>2</sup>

1 From the "Aga Khan Community Health Programme, Dhaka, Bangladesh. Progress Report, April 1990 - September 1990."

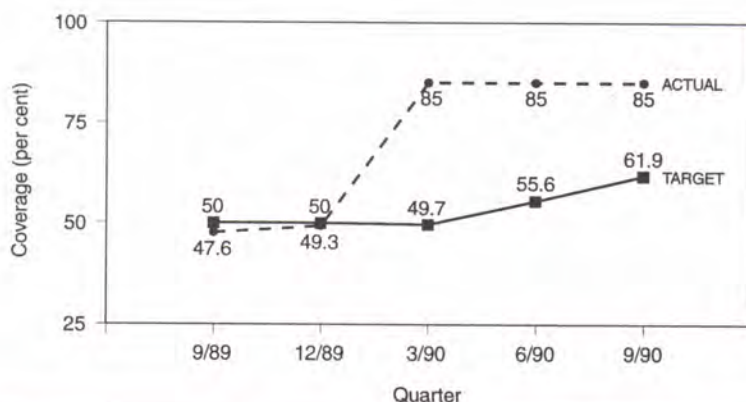
2 *ibid*.



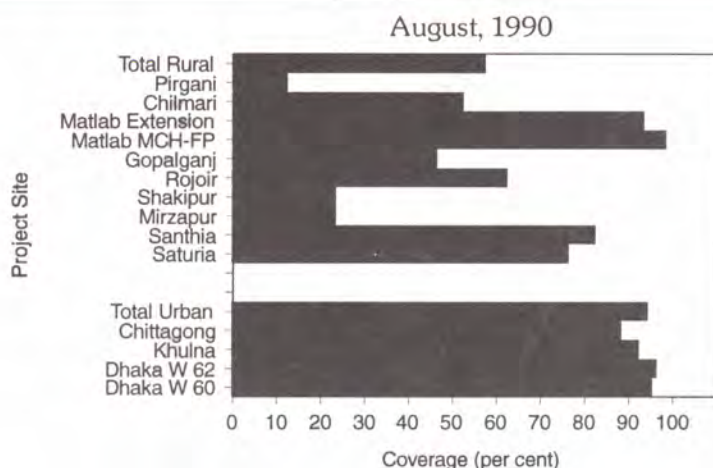
**Table 3: Pregnancy-related indicators: April-September 1990**

	N	%
Total deliveries	575	100.0
Live births	559	97.2
Still births	16	2.8
Delivered by trained personnel	375	66.5
Home delivery	332	57.7
Delivered by AKCHP trained TBA	70	12.2
Delivered by other trained personnel	73	12.7
Delivered by untrained personnel	189	32.9
TT coverage of women delivered		
Complete	393	69.7
Incomplete	132	23.4
None	39	6.9

Data can be presented in a tabular form to compare results over time by administrative areas. The final example (Table 4) shows the number of pills distributed each month for eight districts. Overall, a total of 1,501 pill cycles were distributed. The month of July 1989 had the highest level of pill distribution. Among the eight districts, the Canca district had the highest overall level of pill distribution.

**Figure 2: Eligible children fully immunized: Sept 1989-Sept 1990**



**Figure 4: Vitamin A - capsule coverage****Table 4: Number of pills distributed by district and by month/year**

District	05/89	06/89	07/89	08/89	09/89	10/89	11/89	Total
Calle	5	10	37	30	30	20	21	153
Valle	63	42	10	7	28	11	6	167
Pasto	20	24	42	37	33	38	5	199
Santander	30	40	52	52	37	34	22	267
Caldas	7	15	8	9	4	3	2	48
Atlantico	15	26	9	9	10	13	13	95
Tolima	10	18	13	14	17	33	35	140
Canca	47	52	69	56	71	66	71	432
Total	197	227	240	214	230	218	175	1501

## Step 7: Present the findings

The results of activity monitoring should be presented to those involved in service implementation: supervisors, health staff, community members. You should review the **"Worksheet for specifying objectives"** in Step 1 to determine if the users, in fact, need the information. Although results can be presented graphically or in tables, the presentations should be adapted to the level of the users.



They should be simple and point out major findings. The participants should be allowed to contribute their viewpoints on potential causes of and solutions to problems identified. Meetings with the users of information can promote the sharing of perspectives among the different PHC partners.

## **Step 8: Take appropriate action**

When the monitoring results have been presented and discussed among the various PHC partners, you must use your findings to decide whether action needs to be taken, and if so, which action.

This means that you must first explore causes and then develop solutions. In many cases, the causes may be obvious or well-known to the staff. In Thailand, for example, health workers did not counsel mothers during growth monitoring sessions because the sessions were too noisy and there was not enough time.

---

**Explore  
causes,  
find  
solutions**

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The checklists in Modules 6 and 7 can be helpful guides for exploring the causes of problems. For example, if immunization coverage is low, the immunization checklist could be used to examine the service delivery process to determine whether: health workers are contacting and following up eligible households; mothers are coming to immunization sessions; children are being immunized properly and mothers counselled about possible side-effects; and if vaccines, syringes, and other supplies are in adequate supply.

When the cause of the problem and/or the most likely solution are not known, the PHC MAP Problem-solving guide and the PRICOR Operations Research manuals can help managers work their way through this problem-solving process.

Once a solution has been agreed upon, its implementation must be planned. This involves setting objectives and determining what activities must take place, who should carry them out, where the services should be provided, when the services should be offered, and what resources are required.

The action decided upon may itself require additional short-term monitoring to make sure that: a) the interventions selected are implemented as planned; and b) they have the desired effects.



## **Step 9: Decide whether to continue monitoring**

Activity monitoring is designed to meet the current needs of managers and other users. As those needs change, so these should monitoring requirements. As programmes improve over time, managers may have less need for frequent, detailed information on some inputs and outputs. Effect indicators usually take on more importance as input and output indicators show improved implementation. The number of indicators can ordinarily be reduced when sustained, satisfactory performance has been achieved. Periodic review of all MIS indicators can help managers keep their MIS streamlined by reducing the number of indicators, reducing the frequency of collection of data, and reducing the aggregation and reporting of data to higher levels.







Health outcomes can be monitored by qualitative and anecdotal evidence as well as by quantitative data, as exemplified by the happy countenance of this obviously healthy Bengali boy who has been served by the Aga Khan Community Health Programme in Dhaka, Bangladesh

Photo by Jean-Luc Ray for AKF









## Appendix A: PHC service indicators

This appendix presents an annotated list of selected indicators for the following PHC services:

### GENERAL PHC

General PHC household visit  
Health education

### MATERNAL CARE

Antenatal care  
Safe delivery  
Postnatal care  
Family planning

### CHILD CARE

Acute respiratory infections  
Breast feeding  
Diarrhoeal disease control/oral rehydration therapy  
Childhood disabilities  
Child immunization  
Growth monitoring/nutrition education

### COMMUNITY HEALTH

Water supply, hygiene, and sanitation

### OTHER HEALTH CARE

Accidents and injuries  
Chronic, non-communicable diseases:  
Malaria  
Treatment of minor ailments (general curative care)  
Tuberculosis  
Sexually transmitted diseases, HIV/AIDS

The indicators for each PHC service are divided into three categories: effects, outputs, and inputs. In general, these categories include indicators that cover one or more of the generic criteria described in the text. Examples are shown below.

#### Effect indicators:

- **coverage**, e.g., number or percent of children fully immunized
- **behaviour**, e.g., number or percent of households that use a sanitary latrine



- **knowledge**, e.g., number or percent of TB patients who know why it is important to complete the treatment for tuberculosis
- **skills**, e.g., number or percent of mothers who can correctly administer ORS

#### **Output indicators:**

- **utilisation**, e.g., number or percent of children under two years enrolled in growth monitoring
- **quality of care**, e.g., number or percent of health workers using sterile needles and syringes for each immunization injection
- **contact/visit**, e.g., number or percent of pregnant women contacted/visited by CHWs
- **access**, e.g., number or percent of population living within five kms of health facility

#### **Input indicators:**

- **personnel**, e.g., number of trained TBAs; population per active CHW
- **supplies**, e.g., number or percent of health centres without sufficient ORS packets
- **equipment**, e.g., number or percent of health units without functioning laboratory equipment

Although these indicators represent practical and expert recommendations, they may not be universally applicable and may need to be adapted to fit local circumstances. For some indicators, local standards for treatment, training of staff, and equipment must be reviewed and incorporated into your data-gathering instrument in order to measure PHC inputs, outputs, and effects. For other indicators which require the measurement of knowledge and skills, the user may need to review the content of PHC IEC and training efforts to determine key knowledge areas.

Footnotes provide suggestions for data sources and, in cases where it is not obvious, explain what the indicator is designed to measure and why it is important.

In some cases, more than one indicator is suggested for a similar area. As stated in the introduction, the target group and period of observation need to be specified for many of these indicators. Those given are illustrative only.

The term "health units" applies to health centres, health posts, or community-level health services. This term should be interpreted to fit each programme's health system.

Most of the indicators are designed to be simple counts of activities or simple percentages. In many cases counts will be sufficient, since the objective will often be to determine whether a target has been met.



Percentages are recommended where possible, and ideally, both counts and percentages would be calculated.

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## GENERAL PHC HOUSEHOLD VISIT

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### Output indicators

- number or percentage of households visited by CHW in last three months
- number or percentage of PHC household visits during the last three months where the health worker discussed:<sup>1</sup>
  - growth monitoring/nutrition (if malnourished child)
  - antenatal care (if pregnant woman)
  - family planning (if woman of child-bearing age)
  - water and sanitation
  - immunizations
  - oral rehydration therapy (if diarrhoea case)
- number or percentage of the target group visited by their CHW in the last three months by type:<sup>2</sup>
  - women 15-49 years of age
  - children under 5 years of age
  - high-risk cases

### Input indicators

- number of households per CHW<sup>3</sup>
- population per CHW<sup>2</sup>
- number of active health workers by type:
  - CHW
  - public health nurse
  - midwife

*Notes on the general PHC household visit indicators*

- 1 Care should be taken in analysing and interpreting results for this indicator, since not all households visited would require all the messages listed. The denominators should be adjusted to reflect this.
- 2 Information could be obtained from home visit forms, if they exist, or from rapid surveys (by modifying the PHC rapid survey form).
- 3 Information for this indicator can be derived from population/census information. See Appendix G of Module 2 for estimations of the target population.

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## HEALTH EDUCATION

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### Effect indicators

- number or percentage of respondents who practise health behaviour outlined in the health education objectives<sup>1</sup>





- number or percentage of the target population who remember health education messages on mass media, television, radio, billboards, posters, etc., during the last 1-2 weeks<sup>2</sup>
- number or percentage of respondents who know the importance of the health education topic discussed by CHW during the last visit<sup>3</sup>

### **Output indicators**

- number of the target population that was visited at home and received health information during the last three months<sup>4</sup>
- number or percentage of health workers using 1 or more health education techniques (role playing, demonstration, flip charts, and others used in the local area)
- number or percentage of clients receiving health information in a community or group setting<sup>5</sup>

### **Input indicators**

- number or percentage of CHWs trained in health education<sup>6</sup>
- number of community organisations which provide health education services
- number of CHWs compared with 1,000 households or each village<sup>7</sup>
- number or percentage of respondents that wish to receive additional health education information/topics<sup>8</sup>

#### *Notes on health education indicators*

- 1 Review the local norms for positive health behaviour, as explained in health education materials. Survey respondents to determine if they practise each type of behaviour.
- 2 Respondents can be asked about specific messages from various sources of mass media.
- 3 This indicator is for households that were visited during the last 3 months (see Module 2).
- 4 Target groups may include women 15-49 years, children under age 5, high-risk cases (tuberculosis, malaria, STD/HIV), and others.
- 5 Module 2 Assessing community health needs and coverage, provides interview questions for measuring health education among reproductive age women, children under 24 months, children 24-60 months, and other household members.
- 6 Health workers include CHWs, public health nurses, midwives, physicians and others.
- 7 The ratio of CHWs to households or number per village should be defined in the local context and in accordance with local needs.
- 8 This indicator measures the demand among the population for more information.

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## **ANTENATAL CARE**

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### **Effect indicators**

- number or percentage of pregnant women identified that are "high-risk"<sup>1</sup>
- number or percentage of women who made three or more prenatal visits during their last pregnancy<sup>2</sup>
- number or percentage of women who received two doses of tetanus toxoid to confer protection prior to delivery<sup>3</sup>
- number or percentage of women who complied with iron folate supplementation regime during last pregnancy<sup>4</sup>



- number or percentage of women gaining less than 1 kg/month during the second and third trimester

### Output indicators

- number or percentage of women who received at least one antenatal visit while they were pregnant
- average number of contacts per pregnant women<sup>5</sup>
- number or percentage of pregnant women seen in antenatal care who were counselled about danger signs indicating the need to seek further care
- number or percentage of workers who regularly track high-risk pregnancies<sup>6</sup>
- number or percentage of high-risk women seen by a health worker who were identified as such<sup>7</sup>
- number or percentage of health workers providing medical attention to high-risk pregnant women or referring them<sup>8</sup>

### Input indicators

- number or percentage of health units which experienced stock shortages of iron supplements/malaria prophylaxis<sup>9</sup>
- number of days when iron supplements/malaria prophylaxis were out of stock in the clinic
- number or percentage of women of reproductive age weighing less than 38 kg before pregnancy<sup>10</sup>

#### Notes on antenatal care indicators

- 1 High risk includes: maternal age less than 16 or over 35, first pregnancy over 30 years of age, 5-8 past pregnancies, over 10 years since last pregnancy, previous caesarean section, previous delivery complications, previous still birth, 2 or more previous miscarriages, previous neonatal death, 3 or more abortions, 2 or more infant deaths, previous low birth weight baby, maternal height less than local standard, small pelvic outlet, maternal limp/polio leg, bleeding since last period, clinically anaemic, fever, blood pressure greater than 140/90, sputum AFB positive, diabetes, heart disease, pre-eclampsia, abnormal foetal presentation, sickle cell, malaria, AIDS, breech presentation or transverse lie, large for date pregnancy, suspected twins.
- 2 Information for these indicators can be obtained from rapid or mini surveys of women having delivered within the last 12 or 24 months, depending on local concerns. The norm for the number of visits should be adapted to local policy.
- 3 This indicator shows how well women complete the necessary tetanus toxoid injections during their last pregnancy. The numerator is the number of women that receive the full coverage; the denominator is all ever-pregnant women.
- 4 This information can be gathered in a survey by asking if iron pills were taken during pregnancy.
- 5 This indicator shows how often those women using antenatal care seek it. The numerator would be total antenatal visits, and the denominator would be the number of women making at least one antenatal visit.
- 6 "High-risk" will need to be defined locally. Information can be obtained from supervisory checklists.
- 7 This indicator measures how well the high-risk system works. Information on high-risk pregnancies could be compiled from antenatal cards or other individual service records kept in the health facility which record high-risk factors.
- 8 Whether health workers need to refer, or can provide advice without referral, will depend on the educational and training level of health workers and the sophistication of the health facility.





9 Both indicators point out problems in the supply system, although the second provides a more detailed picture of the extent of the problem. Data can be obtained from supervisory checklists for antenatal care (interviews with health workers or review of stock records and inventories).

10 This is a measure of the risk of pregnancy. This information can be gathered by survey or review of records.

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## SAFE DELIVERY

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### Effect indicators<sup>1</sup>

- number or percentage of deliveries in preferred locations (e.g., hospital, maternity clinic, health clinic, midwifery or birthing centre)<sup>2</sup>
- number or percentage of births attended by trained health provider (physician, nurse, midwife, CHW, TBA)<sup>3</sup>
- number or percentage of mothers with knowledge of danger signs and where to go if complications arise (danger signs include malaria, diabetes, hypertension, liver disease, and others)
- number or percentage of families with members (men, women, mothers-in-law) aware of danger signs of pregnancy, labour, delivery, and puerperium
- ratio of positively treated obstetrical complications to all complications during the last 3-6 months<sup>4</sup>
- percentage of women with optimum weight gain (i.e., no more than 13 kg and no less than 6 kg from pre-pregnancy to childbirth)<sup>5</sup>

### Output indicators<sup>1</sup>

- number or percentage of pregnant women who were trained about the danger signs of delivery and instructed where to go<sup>6</sup>
- number or percentage of obstetrical complication cases treated<sup>7</sup>

### Input indicators<sup>8</sup>

- number or percentage of TBA trained in family planning, recognition of obstetrical complications, and hygienic birthing practices, and linked with the formal health service delivery system<sup>9</sup>
- number or percentage of district hospitals equipped and functioning as first referral centres<sup>10</sup>
- number or percentage of facilities and staff using standardised referral protocols to manage obstetrical complications<sup>11</sup>
- number or percentage of health cadres and staff trained in care of obstetrical complications, especially emergency cases<sup>12</sup>
- number or percentage of communities with organised transport systems in place to effect referral<sup>13</sup>
- 





### Notes on safe delivery indicators

- 1 Most of the effect and output indicators can be obtained from survey interviews of women having delivered during the last 12-24 months.
- 2 This indicator measures women's practice in using preferred facilities. The indicator is only relevant if the women have reasonable access. This indicator could be used to focus only on mothers from the low socio-economic status.
- 3 The indicator is only relevant if the woman has reasonable access to a trained provider. The numerator is the number using a trained provider; the denominator is the number of women with access.
- 4 Positive treatments refer to complications which are successfully treated versus unsuccessful treatments which result in maternal mortality or chronic morbidity. This information can be gathered from a review of records in obstetrical care facilities. If the information is gathered directly from patients, a large sample of women will be required to collect data from those with complications.
- 5 This indicator can be measured by using hospital records and surveys.
- 6 This information can be gathered from a survey of clients or routine service records of MCH facilities or providers.
- 7 This indicator requires a review of obstetrical care facility records.
- 8 Information on input indicators can be obtained from providers and/or a review of service records.
- 9 This indicator is only appropriate where TBAs provide a large proportion of deliveries and their capability is of major concern.
- 10 Periodic service records of health facilities usually provide information about the types of services provided, i.e., obstetrical referral services, and equipment available, i.e., to manage obstetrical complications.
- 11 To measure this indicator, first determine if standardised referral protocols exist and what they are. Next, providers and clients can be surveyed to determine if the protocols are known by the providers and followed.
- 12 To gather this information, determine the types of complications handled by various types of health staff. Then survey health cadres and staff to determine if they have been trained (their knowledge can also be measured). Results of this indicator permit an evaluation of the obstetrical complication capability of various types of health staff and facilities.
- 13 This indicator measures clients' access to emergency obstetrical services and is obtained by surveying obstetrical care providers or facilities.

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## POSTNATAL CARE

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### Effect indicators

- number or percentage of women receiving postnatal care from health workers
- number or percentage of postnatal women who return for follow-up visits
- number or percent of women who have delivered and know when and where to return for a postnatal follow-up visit

### Output indicators

- number or percentage of women who have delivered and were seen at least once during the postnatal period<sup>1</sup>
- number or percentage of health workers counselling mothers on potential danger signs in postpartum period requiring consultation with health worker
- number or percentage of health workers using sterile materials for cutting and bandaging the umbilical cord, OR number or percentage of



mothers who said that health worker used clean materials for cutting and bandaging umbilical cord<sup>2</sup>

- number or percentage of mothers delivered by a trained birth attendant who received counselling on child services after delivery

### **Input indicators**

- number or percentage of clinics/local health workers experiencing shortages of sterile equipment and supplies for appropriate care of the umbilical cord (razor blade, bandages, etc.)
- number or percentage of facilities with one or more health staff trained in postnatal care and counselling<sup>3</sup>

#### *Notes on postnatal care indicators*

- 1 This indicator measures whether women are receiving postnatal follow-up. This information can be obtained from rapid or mini surveys.
- 2 When sterile or clean materials are used, the incidence of postnatal infections is reduced. Information for the first indicator can be obtained from supervisory checklists for deliveries or from exit interviews with mothers. Although the latter may be less reliable, the difficulties of observing delivery practice in many settings may make this the only source of data available.
- 3 The type of person classified as a "trained birth attendant" will depend on local programme norms. This could be a re-trained traditional birth attendant, a public health nurse, or a midwife.

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## **FAMILY PLANNING**

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### **Effect indicators<sup>1</sup>**

- number or percentage of eligible women knowing at least one modern family planning method and where to obtain it<sup>2</sup>
- number or percentage of women of child-bearing age currently using modern family planning methods<sup>3</sup>
- number or percentage of last pregnancies not intended<sup>4</sup>
- average length of time current contraceptors of modern methods have used the method<sup>5</sup>
- number or percentage of births, with less than 24 months' spacing, among younger women 15-29 years<sup>6</sup>
- ratio of births to women below 19 or above 34 years<sup>7</sup>

### **Output indicators**

- number or percentage of eligible women contacted by health worker, for outreach<sup>8</sup>
- number of women receiving methods from CHW, by contraceptive method
- number of new acceptors by method, particularly longer acting methods<sup>9</sup>
- number or percentage of women seen who were referred from other providers for clinic-based services<sup>10</sup>





- number or percentage of health workers who explain where and when to go for routine follow-up for family planning services<sup>11</sup>
- number or percentage of acceptors followed up<sup>12</sup>
- number or percentage of women who received counselling on possible side-effects of the contraceptive chosen, or who were asked about side-effects on follow-up visits

### Input indicators

- number or percentage of health units experiencing stock shortages of each contraceptive method in the last month<sup>13</sup>
- number or percentage of health units who had less than two types of contraceptives in stock at anytime during the month<sup>14</sup>
- number or percentage of villages without a regular supplier of contraceptives<sup>15</sup>

### Notes on family planning indicators

- 1 The effect and output indicators can be measured by surveying eligible women or couples. The woman should live in a conjugal relationship and still be at-risk to pregnancy.
- 2 Modern methods include pills, injectables, IUDs, implants, sterilisation, and condoms.
- 3 This indicator measures the coverage of contraceptive use among reproductive-age women, usually 15-49 years.
- 4 This indicator measures unwanted pregnancies resulting in unwanted births or abortions. It provides a measure of the unmet need for family planning services. The numerator is unwanted last pregnancies; the denominator is the number of women reporting one or more pregnancies.
- 5 This measure is obtained for each contraceptive method and indicates the continuity of effective use. An alternative indicator is to determine if the current method has been used continually for the last 6 or 12 months. The numerator is current contraceptors continually using; the denominator is all current users (by method).
- 6 This indicator measures the spacing of children among young women to improve both the health of mother and baby. Information can be gathered from a survey of mothers.
- 7 Women 15-19 and 34+ years should have substantially lower fertility levels. As women delay marriage and older women limit additional pregnancies, fertility should be concentrated in the ages 20-34 years. This indicator is appropriate for programmes which are targeting young women either to delay marriage or to space births, and older women to use long-term or permanent contraceptive methods.
- 8 This indicator measures the level of contact that family planning services have with their target population. This information can be obtained from rapid or mini surveys.
- 9 IUD, sterilisation, and implant
- 10 This indicator measures how well women using other health services are being encouraged to use family planning as well. It is a measure of service integration. This information could be obtained by modifying the service records (to show if the women were referred and by whom) or through exit interviews with clients.
- 11 Information can be obtained from supervisory checklists using observation of health worker-patient encounters.
- 12 This indicator provides more in-depth information about how well family planning clients are being followed up to ensure continuation. Information could be obtained by compiling information from individual service records to see whether patients are returning or other actions are being taken to ensure they return.
- 13 This indicator can point out problems in the supply system. Data for each method can be obtained from supervisory checklists for family planning; interviews with health workers or review of stock records and inventories. If monthly stock levels have been established for each method, another indicator can be developed to measure low stocks and the risk of shortages.
- 14 Some programmes may want to use this indicator which addresses the issue of contraceptive choice in family planning programmes. This information can be obtained from supervisory checklists. For facilities that have a wider range of methods (5-6) the minimal number can be raised to, for example, three methods.





15 Information for this indicator presupposes knowledge of the villages in the catchment area and their locations. Information about specific availability can come from rapid/mini-surveys or from logistical reports and mapping of the area.

## ACUTE RESPIRATORY INFECTIONS

### Effect indicators

- number or percentage of ARI cases (cough, fever, difficulty breathing) treated by health worker correctly<sup>1</sup>
- number or percentage of ARI patients or their caretakers who know the correct dosage and duration of treatment for ARI
- average number of serious symptoms associated with ARI recognised by mothers with children under age five<sup>2</sup>
- number or percentage of mothers who know the warning signs of ARI and when to seek care<sup>3</sup>
- number or percentage of pneumonia cases receiving standard case management at health facilities<sup>4</sup>
- number of ARI hospitalisations per year among children under age five

### Output indicators

- number or percentage of women with children under age five that were informed of serious ARI symptoms by CHW or other health provider
- number or percentage of health workers using antibiotics only in cases of pneumonia, strep throat, and otitis (per local policy)<sup>5</sup>

### Input indicators

- number or percentage of health units which experienced stock shortages of antibiotics in the last month<sup>6</sup>
- number or percentage of health units/health workers without functioning timepiece with second hand (to count respirations)
- number or percentage of health workers or facilities with health care workers trained in ARI case management
- number or percentage of health facilities that have an ARI treatment chart on the wall
- number or percentage of health facilities with national treatment guidelines

### Notes on treatment of acute respiratory infections indicators

- 1 This indicator measures the level of coverage for ARI treatments by health workers. Information for this indicator can be obtained only from rapid surveys. Some care should be taken in interpreting this indicator since the denominator would be self-diagnosed ARI based on a history of cough, fever, and difficult breathing. The exact criteria to be used to determine what is considered an ARI case will need to be defined locally.
- 2 ARI symptoms include high fever, cough with sputum, rapid breathing, difficult breathing, determined by chest indrawing or retracting, inability to drink, earache or discharge, seizures, weakness or lethargy.
- 3 Mothers should seek care before the symptoms become serious. Symptoms of moderate ARI include; a moist cough (often frequent), and frequent or difficult breathing, sometimes accom-



panied with wheezing or other sound. Moderate ARI is often accompanied by a fever and weakness (lethargy), but these symptoms are associated with a variety of illnesses not just ARI.

- 4 This indicator measures the population that has access to standard ARI case management through a health worker in a facility who is trained in standard ARI case management with a source of free or affordable antibiotics. As ARI case management requires the administration of antibiotics, emphasis remains on access to providers within the health system.
- 5 The denominator in this indicator is health workers prescribing antibiotics for pneumonia, strep throat, or otitis.
- 6 This indicator can point out problems in the supply system. A second, more detailed indicator could be "the percentage of health units with stock-outs of one day or more during the last period." Data for both can be obtained from supervisory checklists for ARI; interviews with health workers or review of stock records and inventories.

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## BREAST FEEDING

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### Effect indicators

- number or percentage of mothers breast feeding babies up to 12 (18) months of age
- number or percentage of mothers who began breast feeding within 24 hours after birth<sup>1</sup>
- number or percentage of mothers who gave the baby colostrum (local word)
- number or percentage of mothers who know why it is important to give colostrum<sup>2</sup>
- number or percentage of mothers who breast fed and did not provide food supplements during the first 4 months<sup>3</sup>
- number or percentage of mothers starting to give supplemental foods (water, other liquids, solid foods) to infants 4-6 months of age<sup>4</sup>
- proportion of infants 6-9 months of age who received both breast milk and complementary foods
- number or percentage of mothers who continued to breast feed during the last case of diarrhoea<sup>5</sup>
- number or percentage of women with children under age two who know how long to continue breast feeding
- number or percentage of currently breast feeding women who know how to position the child and care for her breasts<sup>6</sup>
- number or percentage of currently breast feeding who know what to eat during the lactation period<sup>7</sup>

### Output indicators

- number or percentage of women who were informed during their pregnancy by a health provider about the value of breast feeding and when to start
- number or percentage of postnatal women with children under age two who received breast feeding brochures, pamphlets, or other educational materials





- number or percentage of mothers who received information about breast feeding during the neonatal period; 28 days after birth

### **Input indicators**

- number of workers who have been trained in breast feeding education
- number of CHWs or other health providers with correct knowledge about the benefits of breast feeding and when to start<sup>8</sup>
- number of health units which have prenatal and postnatal educational materials for pregnant/postnatal mothers which explain breast feeding (both benefits and procedures)

### *Notes on breast feeding indicators*

- 1 This indicator shows correct knowledge of mothers about when to initiate breast feeding.
- 2 The numerator is the number of women who answer correctly; the denominator all mothers. The target group can be limited to women with children under ages 2-3 to provide more current information.
- 3 Mothers should breast feed without supplements during the first 4 months of age.
- 4 Mothers should begin to introduce supplemental foods at 4-6 months of age.
- 5 Mothers should continue feeding during diarrhoea. The numerator is mothers who breast feed; the denominator is mothers who reported a case of diarrhoea.
- 6 The baby's head should be slightly elevated during feeding. The breast should be washed with soap and water (before and after) then dried.
- 7 The recommended diet for lactating women includes proteins, vegetables (particularly local vegetables high in vitamin A), and calcium (from milk, other dairy products, bones, or supplement).
- 8 Develop a list of benefits; then ask the provider to identify the benefits to the child's health. Benefits of breast feeding include improved nutrition, increased resistance to diseases, psychological security of the child, and others. Breast feeding should start within the first 24 hours and include the introduction of colostrum.

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## **DIARRHOEAL DISEASE CONTROL/ORAL REHYDRATION THERAPY**

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### **Effect indicators**

- number or percentage of mothers who have heard of cereal based ORT and ORS solution, SSS, or local names
- number or percentage of mothers who can state three rules of home case management for diarrhoea (fluids, feeding, care seeking)
- number or percentage of mothers who know how to prepare cereal-based-ORS solution, SSS, or local name
- number or percentage of mothers who know how to administer cereal based ORS solution and ORS solution, SSS, or local treatment<sup>1</sup>
- number or percentage of mothers who used cereal-based-ORS solution and ORS solution or a recommended home fluid (total volume increased), and continued feeding during their child's last diarrhoea episode (last month)<sup>2</sup>
- number or percentage of breast feeding women who know to continue breast feeding during diarrhoea episode





- number or percentage of mothers who know how often to feed a child with diarrhoea (at least every 3-4 hours)

### **Output indicators**

- number or percentage of health workers who counsel mothers on preparation and administration of cereal-based ORS solution<sup>3</sup>
- number or percentage of health workers who correctly showed the mother how to prepare and administer none cerea-based ORS solution<sup>4</sup>

### **Input indicators**

- number or percentage of health units which experienced stock shortages of ORS in the last month<sup>5</sup>
- number or percentage of mothers who live within a reasonable distance, defined by local norms and expressed in terms of time, of a health facility or provider that has a regular supply of ORS and antibiotics, and practises correct case management<sup>6</sup>

### *Notes on diarrhoea disease control/oral rehydration therapy indicators*

- 1 ORS solution, SSS or local treatment should be administered until the diarrhoea stops.
- 2 This indicator can be used to reflect health unit treatment, community health worker treatment, or home treatment, or all three combined. The decision of what to include will depend on programme objectives and norms.
- 3 Data from some countries have shown that health workers often discuss how to prepare cereal based rehydration solution and ORS solution with mothers, but few provide them with information on how to administer cereal based oral rehydration solution and ORS solution. This indicator requires information on more than one health worker task and would require supervisors to judge health workers on whether they performed both tasks.
- 4 This indicator examines whether health workers actually demonstrate preparation and administration to the mother. If health workers are not administering cereal based rehydration solution and ORS solution in the clinics, mothers will have little chance to see what cereal based rehydration solution and ORS solution preparation and administration involve. This information can be obtained through ORT supervisory checklists.
- 5 Information can be obtained from supervisory checklists, interviews with health workers or review of stock records. The second, more precise indicator, number of days when ORS was out of stock in the clinic or village, would require review of stock records and inventories. Another indicator that could be useful in programmes which promote home distribution of ORS would be the "number or percentage of villages without a regular source of ORS." Information could be compiled from programme reports, maps, and stock records. If the programme distributes ORS through a community-based worker during home visits, the indicator would be "number of days CHW experienced stock shortages of ORS," and information could be obtained from records, inventory, or supervisory checklists.
- 6 Information can be obtained by 1) reviewing the stocks of health facilities and/or providers, and 2) determining the target population that is accessible to the facilities. The numerator is the target population with access to stocked facilities; the denominator is the total target population.

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## **CHILDHOOD DISABILITIES**

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### **Effect indicators**

- number or percentage of disabled children enrolled in special schools or community programmes<sup>1</sup>
- number or percentage of disabled children covered by appropriate health services



- number or percentage of clients/mothers with knowledge of special schools, community programmes, and NGOs involved with disabled children
- number or percentage of mothers who know appropriate care for disabled child
- number or percentage of mothers with disabled children who know how to prevent a similar disability<sup>2</sup>

### **Output indicators<sup>3</sup>**

- number or percentage of clients with disabilities referred for diagnosis or treatment
- number or percentage of health workers currently providing counselling/treatment for disabilities

### **Input indicators**

- number or percentage of health workers who can identify signs and symptoms associated with disabilities<sup>4</sup>
- number or percentage of health workers who know how childhood disabilities can be prevented<sup>5</sup>
- number or percentage of health workers with correct knowledge of national treatment/referral/counselling guidelines for disabilities
- number or percentage of health centres without treatment/counselling facilities for clients with disabilities
- number or percentage of health centres without established treatment, referral, and counselling guidelines

#### *Notes on childhood disabilities indicators*

- 1 These coverage indicators can be modified to reflect different sub-groupings of disabilities, e.g., physical disabilities, mentally handicapped patients, etc. Numerators can be derived from reliable information on enrolment or client participation in disability-related activities and programmes. Denominators can be derived from an inventory or survey of disability-related services in the working area.*
- 2 Disability impairments include movement, deformity, hearing, blindness, speech, behaviour, and other.*
- 3 Information for these indicators can be obtained from supervisory checklists of disability-related service providers.*
- 4 Information for these indicators can be obtained from supervisory checklists of disability-related service providers.*
- 5 To obtain this information, list childhood disabilities of concern, how they occur, and what can be done to prevent them. For each type of disability, develop two or more preventive measures. Respondents are asked to identify preventive measures for each disability and are scored for the number of correct responses.*

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## **CHILD IMMUNIZATION**

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### **Effect indicators**

- number or percentage of children age 12-23 months who are fully immunized with BCG, DPT, measles, and polio vaccines<sup>1</sup>





- number or percentage of children age 12-23 months never immunized with BCG, DPT, measles, and polio vaccines<sup>2</sup>
- number or percentage of mothers who know the age at which children should be immunized against measles (9-12 months of age)
- number or percentage of mothers whose children are not completely immunized who know when to return for the next immunization
- number or percentage of children age 12-23 months whose mothers can present a completely (per local standards) filled immunization card, given the age of the child

### **Output indicators**

- number or percentage of health workers using sterile needles and syringes for each injection
- for outreach programmes number or percentage of immunization sessions held (per area)<sup>3</sup>
- number or percentage of health workers counselling mothers on possible side-effects of vaccines

### **Input indicators**

- number or percentage of health units [or number or percentage of immunization sessions] which experience shortages of vaccines, needles, syringes, and/or immunization cards<sup>4</sup>
- number or percentage of health units whose refrigerator has not been at a temperature between 0°C and 8°C at all times during the previous period<sup>5</sup>

### *Notes on child immunization indicators*

- 1 This is a standard format for assessing immunization coverage. However, if your programme is performing well according to this indicator, you may want to modify it to focus on younger children, e.g., children under one year of age. This more specific information could be obtained from household surveys, by modifying slightly the information collected with the Module 2 rapid or mini surveys. The reason for emphasising younger children is that the risk of dying is much higher in the younger age group. In addition, many older children may have already contracted the disease, clinical or sub clinical, before being vaccinated. Data for either version of this indicator could be collected using Module 2 rapid or mini-surveys. Data could also be compiled from clinic-based records if these are organised by child, and if an estimate of the total target population exists. If no clinic-based records exist, and surveys are impractical, information on the number of children fully immunized by age 23 months could be tallied as children come in for immunization. Their cards could be marked to show they had already been counted. Doing this over a one year period would provide a measure of the number of children completely immunized by a certain age, using an estimate of the number of children in that age group in the target area as the denominator.
- 2 This indicator helps managers identify which groups might be missed altogether by the immunization activities. It can only be collected through household surveys, because that is the only way to collect information from those who do not receive immunization through the programme. In addition, the household survey will also identify unimmunized children, and that information can be used to plan service strategies.
- 3 The minimum standard for this indicator would be quarterly immunization sessions. Mapping the area may be necessary to ensure that outreach sessions are planned in a way that affords access to the whole population. Access must be defined locally, either in terms of distance or travel time. Information on the number and location of immunization sessions can be obtained from work plans or immunization reports.





- 4 A high percentage points out problems in the supply system. Data can be obtained from supervisory checklists for immunizations and/or interviews with health workers or review of stock records and inventories.
- 5 This information can be obtained from supervisory checklists when supervisors inspect temperature logs. An alternative to this would be to divide the numerator into three groups: those without temperature logs, those whose temperature logs show constant temperature between 0°C and 8°C, and those whose temperature logs indicate unacceptable temperature variations.

## GROWTH MONITORING/NUTRITION EDUCATION

### Effect indicators

- number or percentage of children under two years in the target area weighed at least once during the past quarter<sup>1</sup>
- number or percentage of mothers breast feeding babies up to 12 (18) months of age
- number or percentage of mothers starting to give supplemental foods to infants between 4 and 6 months of age
- number or percentage of children whose weight-for-age is below the normal range or whose growth is faltering (per local norms)<sup>2</sup>
- number or percentage of mothers with children under age two who interpret growth chart information<sup>3</sup>

### Output indicators

- number or percentage of children under two years enrolled in a growth monitoring programme
- number or percentage of mothers with children under two years to whom the growth monitoring chart was explained by CHW during the last 3-6 months
- (for outreach programmes) number of growth monitoring sessions held (per area)<sup>4</sup>
- number or percentage of health workers who track malnourished children<sup>5</sup>
- number or percentage of high-risk children (malnourished) followed up<sup>6</sup>
- number or percentage of mothers told child's nutritional status<sup>7</sup>
- number or percentage of mothers with growth-faltering children who received counselling on appropriate feeding

### Input indicators

- number or percentage of health workers/health units which do not have a functioning scale (accurate to 1/10 kg)
- number or percentage of health units (or growth monitoring sessions) experiencing shortages of growth cards in the last month<sup>8</sup>

#### Notes on growth monitoring/nutrition education indicators

*For indicators reflecting the target population, the denominator should be adapted to local programme objectives: children under two, children under five, etc.*



- 1 This standard for frequency of weighing should follow programme guidelines, and ideally would be linked to the number of sessions held. Some programmes may want to concentrate their coverage measures on those age groups most at risk, e.g., 18-36 months, or those who may require more frequent weighings. The intervals between compilations/analyses should be long enough for differences to appear in frequency of weighing. For example, if the indicator is of quarterly weighing, the data should not be collected more than once, or at most, twice a year. If the number of children in the target area is known, and clinic-based records exist, information could also be compiled from service records.
- 2 The phrasing of this indicator should reflect current programme objectives. Information can be obtained from rapid surveys (if weights are taken).
- 3 This indicator measures mothers' ability to correctly interpret growth monitoring charts. Information can be gathered in a survey of mothers with children under age five. The interviewer uses a chart designed for the survey to determine if the mother can identify an underweight child. The numerator is mothers able to interpret the growth chart; the denominator is all women participating in growth monitoring.
- 4 The minimum standard for this indicator would be quarterly growth monitoring sessions (required to ensure coverage with quarterly weighings). Mapping the area may be necessary to ensure that outreach sessions are planned in a way that affords access to the whole population. Access must be defined locally, either in terms of distance or travel time. Information on the number and location of growth monitoring sessions can be obtained from work plans or growth monitoring reports.
- 5 "High-risk" will need to be defined locally, e.g., level 2 and 3 malnutrition, or not growing in the last 3 months. Information can be obtained from supervisory checklists.
- 6 If a high-risk system exists, this indicator measures how well it works. Information on high-risk children could be compiled from growth cards or other individual service records kept in the health unit.
- 7 This indicator could measure counselling at growth monitoring sessions or during routine curative sessions where the child is weighed.
- 8 A high percentage can signify problems in the supply system. Data can be obtained from supervisory checklists for growth monitoring (interviews with health workers or review of stock records and inventories).

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## WATER SUPPLY, HYGIENE, AND SANITATION

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### Effect indicators

- number or percentage of households receiving drinking water from a clean source, faucet, tap, pipe, covered well, or other safe source, within 15 minutes' walk<sup>1</sup>
- number or percentage of households using a clean facility (water-seal latrine, pit privy, or WC)
- number or percentage of mothers knowing the importance of hand washing<sup>2</sup>
- number or percentage of mothers with children under age two who use a baby potty

### Output indicators

- number or percentage of health workers inspecting latrines (per local standards)
- number or percentage of health workers inspecting community management of local water sources (per local standards)<sup>3</sup>
- number of latrines built during the last year<sup>4</sup>
- number of wells or other water sources constructed during the last year<sup>5</sup>





### Input indicators

- number of wells or other water sources constructed per 1,000 population<sup>6</sup>
- number of latrines built per 1,000 population<sup>1</sup>
- number or percentage of communities with access to health staff or technicians with resources (information, funds, supplies) for building safe water supply systems and latrines<sup>7</sup>

#### *Notes on water supply, hygiene, and sanitation indicators*

- 1 This indicator measures the population's access to water, an important factor in sufficient water usage. Information can be obtained using rapid surveys.
- 2 Information on mothers knowledge can be obtained from supervisory checklists for water and sanitation which call for "exit" interviews with mothers, or by adding a question to the rapid survey forms.
- 3 This indicator measures the performance of health workers who either inspect the water sources themselves (if that is part of their tasks) or discuss maintenance of local water sources with the community. This information can be obtained from supervisory checklists (observations or interviews with health workers) or discussions with community members about health worker activities. The indicator should be adapted to the workers' water and sanitation tasks and job descriptions.
- 4 Information can be obtained from activity reports.
- 5 Information can be obtained from activity reports.
- 6 This indicator measures only the accessibility of water and sanitation facilities to a population, not the use of those facilities. It also indicates access to inputs in the local area.
- 7 This indicator measures the access of communities to critical inputs.

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## ACCIDENTS AND INJURIES

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### Effect indicators

- number or percentage of respondents with knowledge of how to care for accidents and injuries<sup>1</sup>
- number or percentage of respondents with knowledge of an emergency care facility<sup>2</sup>
- number of respondents who use safety precautions and equipment on a daily basis<sup>3</sup>

### Output indicators

- number of respondents treated for an injury (by type)<sup>4</sup>
- (in a work place or other high-risk environment) number of safety regulations implemented and enforced
- number or percentage of health workers (CHWs, factory or plant cadres, traditional practitioners, etc. ) trained in injury care
- number or percentage of health workers who received formal training in hazard identification and intervention

### Input indicators

- number or percentage of health care facilities without 24-hour emergency care services





- number or percentage of health care facilities without treatment and referral procedures for clients with injuries

#### *Notes on accidents and injuries indicators*

- 1 This indicator is most useful in a context where risk of accident or injury is relatively high, such as a factory, farm, or other place of work. Start by determining the profile of common accidents and injuries; then determine appropriate first aid treatment. Ask respondents how they would treat key accidents and injuries and compare against the standard. Respondents are the target population of accident/injury prevention and treatment efforts.
- 2 This includes phone number, address, or directions on how to go to a facility.
- 3 This indicator requires a revision of prescribed safety precautions and equipment in a particular context such as a factory, farm, hospital, chemical plant, etc. Respondents are interviewed about the safety precautions followed and equipment available.
- 4 Respondents can be interviewed with a rapid survey (see Module 2).

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## CHRONIC, NON-COMMUNICABLE DISEASES

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### Hypertension<sup>1</sup>

#### Effect indicators

- number or percentage of patients with hypertension
- number or percentage of patients who developed other complications of hypertension
- number or percentage of patients, diagnosed with chronic hypertension, who are in a systematic anti-hypertensive therapy programme
- number or percentage of patients with moderate hypertension<sup>2</sup> who follow a prescribed diet on a daily basis
- number or percentage of patients who take medication as prescribed
- number or percentage of patients who practise the appropriate diet on a daily basis
- number or percentage of patients who were given a special regimen sheet for the use of medication and diet

#### Output indicators

- number of clients diagnosed for hypertension
- number of patients with hypertension who were treated
- number of patients who switched from prescribed medicine to diet
- number of health workers who are clinically knowledgeable in providing diet and medication regimen to patients with hypertension
- number of systematic visits by patients with hypertension
- number or percentage of patients who have been assessed for renal function
- number of patients with hypertension who were provided with instructions for the use of medication and diet



### Input indicators

- number of health workers who can provide diet and medication information to patients with hypertension
- number of primary health centres with daily/weekly availability of trained family doctor
- number of health centres with sphygmomanometers
- number of primary health centres with functioning laboratory equipment and medication for hypertension<sup>3</sup>

#### *Notes on hypertension indicators*

1 Developed by Walid Abubaker, MD, Senior Scientist, University Research Corporation

2 Diastolic blood pressure between 90 and 115, or local definition

3 As determined by local standards

## Diabetes<sup>1</sup>

### Effect indicators

- number or percentage of diabetic patients with annual assessment of renal function
- number or percentage of diabetic patients with semi-annual measurement of glycosylated Hgb
- number or percentage of diabetic patients with documented home glucose monitoring
- number or percentage of diabetic patients with discrepancies between home and clinic monitored results<sup>2</sup>
- number or percentage of diabetic patients with family members who know how to handle a diabetic emergency<sup>3</sup>

### Output indicators

- number or percentage of persons diagnosed for diabetes mellitus
- number or percentage of patients treated for diabetes mellitus by a physician
- number or percentage of patients treated for diabetic ketoacidosis
- number or percentage of patients treated for diabetic foot lesions

### Input indicators

- number of general practitioners or family physicians per 1,000 households
- presence of equipment and other materials in the health units (glucose monitoring, blood pressure, protocol for home glucose monitoring, and insulin schedule)

#### *Notes on diabetes indicators*

1 Developed by Walid Abubaker, MD, Senior Scientist, University Research Corporation

2 This data requires a comparison of clinic records and results of home monitoring. The indicator measures the client's ability to monitor diabetes.

3 This information is gathered from interviewing household members (see Module 2).





## Anaemia

### Effect indicators

- number or percentage of anaemic patients with semi-annual evaluation and follow-up of haemoglobin and haematocrit
- number or percentage of anaemic patients with documented improvement in anaemic condition
- number or percentage of anaemic women who know the treatment for anaemia

### Output indicators

- number or percentage of persons diagnosed for anaemia
- number or percentage of patients treated for anaemia
- number or percentage of patients treated for symptomatic anaemic conditions (pale, weak, etc.)
- number or percentage of patients who received education for nutritional health

### Input indicators

- number of general practitioners or family physicians per 1,000 household with knowledge or understanding of anaemia
- number of providers/primary centres with staff, equipment and other materials for monitoring haemoglobin, haematocrit, blood count (WBC/CBC)

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## MALARIA

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### Effect indicators

- number or percentage who know how malaria is spread<sup>1</sup>
- number or percentage of population who are protecting themselves against malaria<sup>2</sup>
- number or percentage of malaria (fever) cases treated with anti-malarial drugs at home (by mother who knows correct dosage)<sup>3</sup>
- number or percentage of patients who were prescribed anti malarial drugs who know dosage, frequency, and duration of treatment<sup>4</sup>

### Output indicators

- number or percentage of malaria (fever) cases treated at health unit<sup>5</sup>
- [in areas where confirmation is the norm] number or percentage of health workers who take/request a blood slide from malaria/fever cases
- number or percentage of health workers who screen fever patients for signs/symptoms of other serious illnesses (meningitis, pneumonia, etc.)





### Input indicators

- number or percentage of health units experiencing stock shortages of anti-malarial drugs in the last month<sup>6</sup>
- number or percentage of health units without functioning laboratory equipment

#### Notes on malaria indicators

- 1 The indicator measures knowledge of modes of transmission.
- 2 The following can be used to protect against malaria: mosquito nets, household spray, eliminating standing water, using anti-malarial drugs, and other locally appropriate means.
- 3 This indicator measures coverage for home treatment of malaria for programmes which are promoting such an approach. Information for this indicator can only be obtained from rapid surveys. A drawback to this indicator is that the denominator would be based on self-diagnosed fever or malaria. Local definitions of malaria will have to be developed to determine which symptoms constitute a diagnosis of malaria.
- 4 The numerator is the number of clients who are knowledgeable of correct treatment divided by all patients prescribed anti-malarial drugs. Data is gathered by a survey of individuals diagnosed with malaria who received drugs from a CHW or health facility.
- 5 This indicator measures health worker treatment of malaria. Like the indicator above, information can be obtained from rapid surveys, and it, too, is based on self-diagnosed fever or malaria.
- 6 Both indicators can point out problems in the supply system. A more detailed indicator, number of days when anti malarial drugs were out of stock during last period, can measure the extent of the problem. Data can be obtained from supervisory checklists for malaria (interviews with health workers or review of stock records and inventories).

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## TREATMENT OF MINOR AILMENTS

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### Effect indicators

- number or percentage of illness episodes treated at health unit<sup>1</sup>
- number or percentage of patients who were able to obtain all of the medication prescribed in the health unit
- number of patients receiving laboratory services in the same health unit per number requiring laboratory services
- number or percentage of patients or their attendants who understand the treatment prescribed – how much, how long, how often<sup>2</sup>

### Output indicators

- number of treatments given during last period by condition<sup>3</sup>
- number or percentage of health workers asking at least five history questions and carrying out at least one physical exam<sup>4</sup>

### Input indicators

- number or percentage of health workers who know the explicit criteria for referring patients to a higher level (per local policy)<sup>5</sup>
- number or percentage of health units without functioning:<sup>6</sup>
  - stethoscope      - thermometer      - watch with second hand
  - scale              - blood pressure cuff      - microscope and slides



- number or percentage of cases where prescribed medicines were available at the health unit at the time of consultation, compared to all cases that were prescribed medicines<sup>7</sup>
- availability of drugs for high volume conditions
- availability of laboratory tests used more frequently

#### *Notes on treatment of minor ailments indicators*

- 1 This indicator is a rough measure of coverage for curative services. It should be interpreted with care, since some illness episodes may not require health care services. The types of illness episodes to be counted in the denominator will need to be decided locally. Such an indicator can suggest problems such as acceptability or financial accessibility. Interpretation can be aided by using this indicator to compare "coverage" over time or with other health units.
- 2 To apply this indicator develop a list of minor ailments to monitor. For each ailment determine the treatment protocol – how much, how long, and how often. This indicator measures the knowledge of patients/caretakers (effect) and can also be modified to gauge the knowledge of health providers (input).
- 3 This indicator, plotted over time and compared among health units, can help managers track trends and efficiency. Variations could be due to seasonal epidemiological patterns or financial resources of the population. Changes could also reflect problems or strengths in acceptability of services. Efficiency can be assessed by comparing the number of treatments among health units to see if personnel allocation reflects use rates.
- 4 The numbers of history questions and exams can be adapted to reflect local policy. However, a minimum number is necessary to ensure that workers are doing more than simply accepting the patient's diagnosis, and that they are able to identify potential multiple health problems. Information can be obtained from curative care supervisory checklists which use observation. In some cases, the supervisor may have to use some judgement about whether the worker did the appropriate history and physical exams.
- 5 This indicator measures the knowledge of health providers and their ability to treat minor ailments. Develop a list of key minor ailments of concern to your programme and the referral criteria. Then ask the respondent to recall ailment-specific referral criteria.
- 6 The equipment to be included in this indicator will need to be adapted to local policy and the level of health worker being evaluated.
- 7 This indicator attempts to evaluate availability of essential drugs. The indicator can be revised if local policy states that drugs are not to be distributed at the health unit, e.g., drugs are distributed at a nearby drug outlet or clinic/hospital. Data can be gathered by checking drugs prescribed with drug stocks.

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## **TUBERCULOSIS**

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### **Effect Indicators**

- number or percentage of children vaccinated with BCG<sup>1</sup>
- number or percentage of target group who know how TB is spread and how to prevent infection<sup>2</sup>
- number or percentage of detected tuberculosis cases followed to cure<sup>3</sup>
- number of active tuberculosis cases<sup>4</sup>
- number or percentage of tuberculosis patients knowing why it is important to complete treatment
- number or percentage of tuberculosis patients knowing the correct dosage and duration of treatment for tuberculosis
- number or percentage of population with persistent cough lasting more than two weeks who sought treatment for TB





### Output indicators

- number or percentage of suspected tuberculosis cases sent for confirmation<sup>5</sup>
- number or percentage of health workers who have a system for following up suspected and confirmed tuberculosis cases<sup>6</sup>
- number or percentage of suspected and confirmed tuberculosis cases followed up<sup>7</sup>

### Input indicators

- number or percentage of health units without adequate equipment to diagnose tuberculosis<sup>8</sup>
- if the health unit is a tuberculosis treatment centre, number of days when tuberculosis drugs were out of stock

#### Notes on tuberculosis indicators

- 1 This measures the coverage of the immunization programme and the effectiveness of TB prevention efforts.
- 2 This information can be gathered from a survey. Asking probing questions to explain (see Module 2).
- 3 Information for this indicator, which is a partial measure of coverage, can be obtained by compiling information from tuberculosis service records. The denominator for this indicator would be the number of tuberculosis cases (detected by the health services) that should have completed treatment during the period being evaluated.  
A truer measure of coverage might be constructed if reliable information can be collected about the number of tuberculosis cases in the community. The vital events rapid survey does contain information about point prevalence for tuberculosis, but the value of this information depends on the ability of the population and the interviewer to classify tuberculosis cases from survey data. If this information is felt to be reliable enough, the indicator could be modified by changing the denominator to all tuberculosis cases in the community, rather than those detected by the health services.
- 4 This indicator allows managers to follow changes in tuberculosis case detection over time or among health units. Information can be compiled from tuberculosis registers.
- 5 Confirmation can be defined as laboratory examination of sputum or X-rays, depending on local policy. This information can be obtained from supervisory checklists for tuberculosis or, if the information is available, from compilation of curative consultation or tuberculosis records.
- 6 Information can be obtained from supervisory checklists.
- 7 If a follow-up system exists, this indicator measures how well it works. Information on suspected and confirmed cases could be compiled from tuberculosis service records kept in the health unit to determine the percent of active cases that presented themselves voluntarily for their appointments or were visited/contacted by the health services if they defaulted on their treatment.
- 8 Equipment includes thermometer, stethoscope, tuberculosis test, etc. per local policy.

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## SEXUALLY TRANSMITTED DISEASES AND HIV/AIDS

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### Effect indicators

- number or percentage of target groups screened last 3 months (or shorter period if necessary) for HIV/STDs<sup>1</sup>
- number or percentage of target groups screened with an STD during the past 12 months





- number or percentage of target population with correct knowledge of the means of HIV/STD transmission<sup>2</sup>
- number or percentage of target population who know that condoms provide protection against infection with HIV/STDs<sup>3</sup>
- number or percentage of target population reporting sex with use of condom<sup>4</sup>
- number or percentage of pregnancies that occur among HIV-infected women<sup>5</sup>
- number or percentage of HIV-infected women of child-bearing age who use a barrier contraceptive method (male or female condom)
- number or percentage of the target population who report having had at least one sex partner other than their regular sex partner(s) in the last 6 months

### **Output indicators**

- number or percentage of injections given with sterile needles
- number or percentage of health workers who correctly dispose of contaminated materials
- number or percentage of clients referred by health workers for diagnosis, treatment, or testing
- number or percentage of clients receiving antibiotics for STDs
- number of condoms distributed to the target population
- number of IEC materials distributed to target population
- number of group HIV/STD prevention activities held during the last 1-3 months; meetings, presentations, TV/radio broadcasts, media events, etc.<sup>6</sup>

### **Input indicators<sup>7</sup>**

- number or percentage of the target population with access to STD-related services<sup>8</sup>
- number or percentage of appropriate outlet centres having uninterrupted supply of condoms during preceding 12 months<sup>9</sup>
- number or percentage of health centres providing STD-related services with uninterrupted supply of appropriate antibiotics during preceding 12 months
- number or percentage of health centres without proper equipment<sup>10</sup> or laboratory facilities
- number or percentage of health units with identification, treatment, referral, and follow-up guidelines
- number or percentage of treatment facilities without counselling activities<sup>11</sup>



- number or percentage of health workers who are trained in care/counselling of HIV/STD patients
- number or percentage of health workers with correct knowledge of the modes of transmission of HIV/STDs<sup>12</sup>
- number or percentage of health workers who know the correct diagnosis, treatment, referral, or counselling guidelines for HIV/STDs<sup>13</sup>

*Notes on sexually transmitted diseases indicators*

- 1 This effect indicator measures the behaviour of the target group to receive screening. When calculated as a percentage, the coverage of screening services is obtained. If screening is largely compulsory for high-risk populations, then the indicator is measuring the output of the HIV/STD programme.
- 2 This indicator measures knowledge of HIV/STD transmission. For each type of HIV/STD, develop a list of ways the disease can and cannot be contracted. Ask the target population to identify the correct modes of transmission. Score the number of correct and incorrect responses.
- 3 This type of indicator addresses clients' knowledge of prevention of sexual transmission through the use of condoms. Information can be obtained from knowledge, attitudes, and practice (KAP) surveys or Module 2 rapid assessments for HIV/STD.
- 4 This indicator can be replaced with one concerning abstinence before marriage, sex with only one partner or faithfulness within marriage, or other sexual behaviours which may prevent transmission.
- 5 This indicator and the succeeding one address prevention of mother-to-foetus/child transmission. Information for this indicator can be derived from KAP surveys and/or Module 2 rapid assessments on maternal child care which includes an HIV/STD component.
- 6 The information can be obtained from providers or the target population (to determine coverage of prevention efforts). Develop a list of prevention activities; then survey all organisations (e.g., in a city) involved in HIV/STD prevention. The list of organisations includes public/private health services, schools, religious organisations, TV and radio stations, advertising groups, etc.
- 7 Input indicators include access to services (both preventive and treatment), training of health workers, and their knowledge about transmission, treatment, and counselling.
- 8 This indicator is measured as the number of health units with IEC and screening facilities per 10,000 target population.
- 9 "Appropriate outlet centres" may include any health facility or service which distributes condoms and which will be monitored by the programme. This term is from: Heymann D, Biritwum R, Paget W.J. Evaluation of AIDS programmes. The handbook for AIDS prevention in Africa. Family Health International, 1990: 234.
- 10 "Proper equipment" may include an examination table, gloves, speculum, sterilisation equipment, etc. Information for this indicator can be obtained from inventory lists, purchase orders, supply records, etc.
- 11 If counselling guidelines are established, review them to determine the key components (inform client about transmission, prognosis, follow-on treatment, etc.). Use a checklist and ask the provider or counsellor to identify or explain counselling components. Score those which are correctly identified.
- 12 A list of correct and incorrect transmission modes are developed for each type of disease. Then the respondent is asked to identify the correct modes of transmission. Information for this indicator and the succeeding one can be obtained from supervisory checklists on HIV/STD service delivery or interviews with health providers/counsellors.
- 13 Determine the guidelines for diagnosis, treatment, referral, and counselling (where applicable). Next, test the knowledge of health providers against the guidelines. The data can be checked by asking exiting clients if guidelines were followed.





## Appendix B: PHC management indicators

This appendix presents an annotated list of selected indicators for the following management services:

- Planning
- Personnel management
- Training
- Supervision
- Financial management
- Logistics management
- Information management
- Community organisation

The indicators for each PHC management service have been divided into three categories: effects, outputs, and inputs. In general, these categories include indicators that cover one or more of the generic criteria described in the text.

- **Effect indicators** measure how well the management service met its goals. For example, indicators of the effects of training and supervision could measure whether worker skills were increased. The desired effects of planning could include the achievement of coverage objectives. Monitoring the effects of personnel management could include the number of vacant posts.
- **Output indicators** reflect the activities that need to be carried out to achieve the desired effects. Output indicators for management services include measures of frequency of activities, such as the percentage of workers visited by, or meeting with, their supervisor in the last period. They can also monitor the quality of the activity: e.g., the percentage of training sessions that allowed participants to put new knowledge and skills into practice during training using real life cases or role-play.
- **Input indicators** measure the presence of key resources needed for carrying out the management activities, such as personnel, supplies, and procedures/guidelines.

Management services can operate at many levels of the system, such as the health centre, the district, the province/region, or the central level. Management systems can vary widely between programmes, levels, and countries; these indicators may not be universally useful as such, and may require adaptation to your specific programme.



Footnotes provide suggestions for data sources and where it is not obvious explain what the indicator is designed to measure and why it is important.

The term "health unit" applies to a unit which is being monitored. For example, if you are a district level manager, the health units could be health centres or health posts. If you are a regional or provincial manager, the health units could be districts. This term should therefore be interpreted to fit each programme's health system.

These suggested management indicators have been developed with the assumption that management systems are already in place for these services. If there is no system in place, you should refer to the Module 7 management checklists as a starting point.

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## PLANNING

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Planning is the process of defining community health problems, identifying needs and resources, establishing priority problems, and designing strategies and administrative action to reach those goals.

### Effect indicators

Outcomes for planning would be the implementation of planned activities and the achievement of programme objectives. These should be reflected in coverage and KAP indicators for specific service delivery interventions (see Appendix A for indicators).

### Output indicators

- number or percentage of health units which have a written mission statement that defines their target population, the programme's activities, and its goals<sup>1</sup>
- number or percentage of health units which have concrete, measurable objectives for coverage, service quality, changes in population knowledge/practice<sup>2</sup>
- number or percentage of health units whose plans have corresponding budgets<sup>3</sup>

### Input indicators

- number or percentage of health units which have clearly defined catchment areas they are to serve<sup>4</sup>
- number or percentage of health units which have information on the population they serve: total population size, number of children < 2 years, number of births a year, number of women 15-49 years<sup>5</sup>





### Notes on indicators for planning

- 1 Mission statements are important guides for programme planning. They specify who the programme is trying to serve, what needs the programme is trying to address, and how it plans to address them. Data can be obtained from Module 7 planning checklists and discussion guides.
- 2 Staff should be aware of programme objectives and know how close they are to achieving them. The ongoing planning process should include regular revision of objectives to reflect programme progress. Data can be obtained from Module 7 planning checklist, using interviews, informal discussion, or document reviews.
- 3 Information can be obtained from Module 7 planning checklists or from review of plans.
- 4 Proper planning requires knowledge of the geographic extent of the catchment area, physical barriers such as mountains or rivers, and the number of villages/neighbourhoods. Information can be obtained from Module 7 planning checklists or from observation of health units (do they have maps of the area with their service delivery points demarcated?) and from interviews with health staff.
- 5 Information on the size of the target populations should be regularly updated. Information for this indicator can be obtained from Module 7 planning checklists and discussion guidelines.

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## PERSONNEL MANAGEMENT

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Personnel management is designed to ensure that the organisation attracts and retains skilled and competent people, that people are productive in their jobs, and that they are rewarded appropriately by the organisation for their output.

### Effects indicators

- number or percentage of vacant posts<sup>1</sup>
- average duration at a post for each type of worker<sup>2</sup>

### Output indicators

- number or percentage of staff whose job descriptions have been updated in the last year to reflect current responsibilities<sup>3</sup>
- number or percentage of supervisors who develop specific work plans with their staff at regular intervals (per local norms)<sup>4</sup>
- number or percentage of supervisors who review whether work assignments have been completed<sup>5</sup>

### Input indicators

- number or percentage of staff members with job descriptions<sup>6</sup>
- number or percentage of facilities that provide cost-recovery (expense/revenue) data
- number or percentage of local offices that submit budget estimates on time
- number or percentage of facilities which have guidelines for developing work plans

### Notes on indicators for personnel management

- 1 This indicator reflects job retention rates and the ability to hire replacements. Information can be compiled from personnel records.
- 2 This indicator reflects how long staff members stay on the job. If the attrition rate is high, this means that salaries and benefits may not be adequate to retain staff. Information can be compiled from personnel records.



- 3 Information can be obtained from Module 7 personnel management checklists, through interviews with workers and supervisors, and through review of job descriptions.
- 4 Information can be obtained from Module 7 personnel management checklists and discussion guidelines.
- 5 Information can be obtained from Module 7 personnel management checklists and discussion guidelines.
- 6 Information can be obtained from Module 7 checklists and personnel records.

## TRAINING

Training serves to continually improve the knowledge, skills, and competencies of health workers so that service delivery or management activities can be carried out correctly.

### Effect indicators

- number or percentage of participants in training who showed improvement between the pre- and post-tests<sup>1</sup>

Other outcome indicators would be improvements in worker performance in the field. Many service delivery output indicators for specific interventions can be used for this purpose (see Appendix A).

### Output indicators

- number or percentage of health workers having received training or refresher training in the last period for any intervention, or for specific interventions<sup>2</sup>
- number or percentage of training sessions that allowed participants to put new knowledge and skills into practice during training, using real life cases or role-play<sup>3</sup>
- number or percentage of training sessions in which technical content was complete and accurate<sup>4</sup>

### Input indicators

- number or percentage of health units using programme specific information (from MIS or supervision) about service quality to plan or focus training sessions given in the last period<sup>5</sup>
- number or percentage of trainers who have received instruction in training methods<sup>6</sup>
- number or percentage of health facilities that hold PHC training sessions

#### Notes on indicators for training

- 1 Information can be obtained from training reports. If reports of training sessions do not include such information, then it could be added as a required element. This indicator could be phrased as the average percentage improvement between pre- and post-test scores, or it could be formulated as the percentage of participants whose post-test scores were higher than their pre-test scores and who reached a desired level at the post-test.
- 2 Information can be obtained from personnel records, worker interviews, or training reports.
- 3 Information on training methods could be obtained from Module 7 training checklists and using observation, reviewing training reports, or interviewing trainees.





- 4 Information can be obtained from Module 7 checklists, through review of presentation and take-home materials, review of training curricula and reports, and structured observation of training sessions.
- 5 Information could be obtained from Module 7 training checklists and discussion guidelines, through review of training curricula or interviews with trainers.
- 6 Information can be obtained from personnel records or through interviews with trainers.

## SUPERVISION

Supervision is the process of ensuring that staff perform their duties effectively, through support, guidance, on-the-job training, and assistance in identifying and solving problems.

### Effect indicators

- number or percentage of health workers who feel they are receiving adequate support from their supervisors<sup>1</sup>

Other outcome indicators for supervision include measures of improved worker performance. These can be assessed using many of the service delivery output indicators for specific interventions (see Appendix A) and comparing them over time.

### Output indicators

- number or percentage of supervisees visited by or meeting with their supervisors during the last period (per local norms)<sup>2</sup>
- number or percentage of health workers whose supervisor observed them during service delivery (or through role-play/simulation) during the last supervision visit<sup>3</sup>
- number or percentage of supervision visits that included problems identified and actions taken<sup>4</sup>
- number or percentage of supervision visits that included review or follow-up on problems from previous supervision visits<sup>5</sup>

### Input indicators

- number or percentage of field supervisors who have been trained in guidance and quality assessment
- number or percentage of health units that have written guidelines or protocols for supervision<sup>6</sup>

### Notes on indicators for supervision

- 1 An important aspect of supervision is providing moral and technical support to workers. This indicator measures the effects of supervision from the perspective of the workers. Information can be obtained through individual interviews or focus group discussions with supervisees.
- 2 Information can be obtained from Module 7 supervision checklists, interviews with supervisees, and from supervision reports. For health units where supervisee and supervisor work in the same location, this indicator could measure the number of supervisory meetings.
- 3 Information can be obtained from Module 7 checklists and discussion guidelines, using observation, interviews with supervisees and supervisors, or review of supervision reports.
- 4 This indicator measures whether supervisors collect information that would tell them if problems exist, analyse that information, and use it to support corrective action. Information can



be obtained from Module 7 supervision checklists. Supervision reports can be modified to provide such information by requiring recording of problems and actions.

- 5 This indicator measures whether supervisors are using information they collected from previous supervision visits to help structure current supervision visits and to monitor progress. Information could be obtained from Module 7 checklists, using observation or interviews with supervisors and supervisees.
- 6 Information can be obtained from Module 7 supervision checklists.

## FINANCIAL MANAGEMENT

Financial management seeks to manage programme finances, budgets, cost-recovery, and fund-raising.

### Effect indicators

- number or percentage of health workers that were paid on time in the last period<sup>1</sup>
- number or percentage of health units that achieved cost-recovery and their planned service goals<sup>2</sup>
- average percentage of costs recovered from revenue<sup>3</sup>

Other possible indicators for outcome of financial management could be planned activities that were able to take place because there were sufficient resources, or a budget that reflected both programme objectives and actual expenditures.

### Output indicators

- number or percentage of health units whose accounting records are up to date and balanced monthly<sup>4</sup>
- number or percentage of health units with systems of checks and balances for handling cash (including vouchers, disbursements by cheque, verification of accounts)<sup>5</sup>
- number or percentage of health units whose financial reports are evaluated by making comparisons of "budget" with "actual" financial performance<sup>6</sup>

### Input indicators

- number or percentage of health workers trained in financial management<sup>7</sup>
- number or percentage of financial management staff with training in finance administration

### Notes on indicators for financial management

- 1 Information can be obtained from account books or from interviews with workers.
- 2 The goal of planning and financial management is to have sufficient resources to carry out the desired activities. It is possible to have balanced books without achieving one's goals. Thus, this indicator looks at both together. Information can be obtained from account books and coverage results (see indicators in Appendix A).
- 3 For programmes that generate revenue through user fees or other local mechanisms, this indicator tracks progress towards sustainability and self-sufficiency. Information can be obtained from account books.





- 4 Information can be obtained from Module 7 financial management checklists, through accounting records and interviews with administrators/supervisors.
- 5 Information can be obtained from Module 7 financial management checklists, based on interviews with staff and review of accounting records.
- 6 Information can be obtained from Module 7 financial management checklists, through interviews with administrators.
- 7 Information can be obtained from personnel records and interviews with workers responsible for financial management.

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## LOGISTICS MANAGEMENT

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Logistics systems deal with procurement, storage, and tracking of supplies in order to ensure that drugs, materials, equipment, and transportation for service delivery and support services are available.

### Effect indicators

- number or percentage of health units receiving the amounts of materials they requisitioned<sup>1</sup>
- number or percentage of health or support activities cancelled due to lack of transportation<sup>2</sup>

Other outcome indicators for logistics management can be derived from the input indicators for specific service delivery interventions, such as lack of stock shortages (see Appendix A).

### Output indicators

- average interval between a health unit making a requisition and reception of requested supplies<sup>3</sup>
- number or percentage of health units using stock inventory and consumption patterns as the basis of preparing requisitions<sup>4</sup>
- number or percentage of health units that carry out a physical inventory to verify theoretical stock levels with actual physical counts<sup>5</sup>
- number or percentage of health units who have to cancel field visits and other planned off-site activities for lack of adequate fuel supply<sup>6</sup>

### Input indicators

- number or percentage of health units with established checklists or procedures for procurement
- number or percentage of health units with schedules or appointment books for health unit vehicle use<sup>7</sup>

#### Notes on indicators for logistics management

- 1 Information can be obtained from stock records, requisition forms, and interviews with health workers.
- 2 Information can be obtained from interviews with health workers or from activity plans and reports.
- 3 Information can be obtained from requisition forms and stock inventory records, and from interviews with health workers.
- 4 Information can be obtained from inventory records and interviews.
- 5 Information can be obtained from Module 7 logistics checklists, through interviews, review of stock records, and observation.



6 Information can be obtained from Module 7 checklists, interviews with health workers, and reviews of activity plans.

7 Information can be obtained from Module 7 checklists, through interviews.

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## INFORMATION MANAGEMENT

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Management information systems are designed to provide workers, managers, funders, and community members with the information they need to plan, implement, and monitor service delivery and support activities.

### Effect indicators

- number or percentage of health units that utilise monitoring information to identify district-wide and localised problems and strengths, and actions to take<sup>1</sup>
- number or percentage of local health units that receive feedback from district level managers on results of district-wide monitoring<sup>2</sup>

### Output indicators

- number or percentage of districts that compile monitoring information from the health unit level<sup>3</sup>

### Input indicators

- number or percentage of health units who have indicators they routinely monitor<sup>4</sup>
- number or percentage of health units that maintain records on high risk cases

#### *Notes on indicators for information management*

- 1 Information can be obtained from Module 7 management information systems checklists, through interviews and review of monitoring reports.
- 2 Information can be obtained from Module 7 management information systems checklists, through interviews with health unit managers.
- 3 Information can be obtained from Module 7 management information systems checklists, through interviews with health unit managers.
- 4 Information can be obtained from Module 7 management information systems checklists, through interviews with health workers and document review.

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## COMMUNITY ORGANISATION

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Community organisation is designed to involve the community in health activities to ensure that programme services reflect community needs and desires. Community organisation activities can also provide the community with organisational and planning skills they can apply in other development areas. This is one management service that will vary quite extensively from one programme to another, and from one community to another.





## Effect indicators

- number or percentage of community members who state that PHC services are accessible, and convenient<sup>1</sup>
- number or percentage of community members who state that the PHC services are acceptable, and relevant to their needs<sup>1</sup>

Other outcomes can be measured through coverage rates for specific service delivery interventions, since satisfaction should be manifested in service utilisation (see Appendix A for coverage indicators).

## Output indicators

- number or percentage of community committees that met at least monthly (per local norms) during the last quarter<sup>2</sup>
- (using an area relevant to your programme) number or percentage of communities that participate in each of the following activities: e.g., health, religion, family planning, youth, sports, income generating, etc.<sup>3</sup>
- number or percentage of community committees that participate in problem analysis and problem-solving<sup>4</sup>
- level of community contribution directed to PHC services<sup>5</sup>
- number or percentage of community members participating in health activities<sup>6</sup>

## Input indicators

- number or percentage of health units which have an affiliated health committee or community organisation<sup>7</sup>
- number of trained community organisers
- availability of resources, labour, funds, buildings, political support, mass activities and materials, to assist in organising communities

### Notes on community organisation indicators

1 Information can be obtained from focus group discussions or more formal interviews with community members (see Module 2).

2 Information can be obtained from Module 7 community organisation checklists, through review of committee meeting minutes or reports, or through interviews with health staff and committee members.

3 Information can be obtained from Module 7 community organisation checklists, using interviews with health workers and community members. Data can be collected for each type of community organisation. Also communities can be scored by the number of active community organisations.

4 Information can be obtained from Module 7 community organisation checklists, through interviews with health staff and committee members, and through review of meeting reports.

5 This indicator measures the degree of local resources, labour, buildings, money, equipment, political commitment, and mass activities, used to support PHC services.

6 This can be calculated for different age groups and/or target populations (infants, children, young people, married women, adult males, senior citizens, etc.). Information can be gathered from a survey or examination of community organisation records.

7 Information can be obtained from Module 7 community organisation checklists.







## Appendix C: Impact indicators for monitoring mortality, morbidity, disability, and fertility

This appendix provides an annotated list of impact indicators which can be used to measure mortality, morbidity, disability, and fertility status of a population.

Impact indicators can be used to;

- evaluate the impact of PHC services on the occurrence of deaths and diseases,
- establish priorities among diseases,
- identify high-risk population groups so that PHC resources can be used effectively,
- observe disease trends and patterns of illnesses and deaths, and
- identify, investigate, and control outbreaks or epidemics.<sup>1</sup>

Impact measures can be expressed as numbers, rates, and ratios.<sup>2</sup>

Impact information can be gathered through surveys, routine or sentinel reporting systems, case/outbreak activities, special studies, and vital records.<sup>3</sup> Module 4, "Surveillance of morbidity and mortality," describes how to design and implement a surveillance monitoring system to track PHC service impacts.

Impact indicators for mortality, morbidity, disability, and fertility are grouped by target populations of PHC programmes.

### Notes

- 1 World Health Organization, *Expanded programme on immunization, Disease surveillance: Training for mid-level managers*. WHO/EPI/MLM/91.4, p. 1, Geneva.
- 2 In a rate, the numerator is part of the denominator, and time is essential. A rate measures the speed with which the denominator becomes part of the numerator.
- 3 In sentinel reporting, only a small number of reporting units are selected, and these units often collect additional information compared with routine reporting.

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## MORTALITY<sup>1</sup>

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### Infant mortality

- perinatal mortality rate: number of late foetal + infant deaths in first 7 days of life per 1,000 live births
- neonatal mortality rate: number of infant deaths in first 28 days of life per 1,000 live births
- infant mortality rate (IMR): number of deaths in first year of life per 1,000 live births



### Child mortality<sup>2</sup>

- child mortality rate, 12-23 months: number of deaths, ages 12-23 months, per 1,000 population, ages 12-23 months
- child mortality rate, 1-4 years: number of deaths, ages 1-4 years, per 1,000 population, ages 1-4 years
- child mortality rate, < 5 years: number of deaths, ages 0-4 years, per 1,000 population, ages 0-4 years

### Maternal mortality<sup>3</sup>

- number of maternal deaths: number of women dying of childbirth; pregnancy, labour, or within 42 days of delivery<sup>4</sup>
- maternal mortality ratio: number of women dying of childbirth; pregnancy, labour, or within 42 days of delivery per 100,000 live births per year<sup>5</sup>
- maternal mortality rate: number of women dying of childbirth per 100,000 women of reproductive age per year<sup>6</sup>
- life-time risk of death (LTR): cumulative risk of death from motherhood.<sup>7</sup>

### Case fatality rate

- number of deaths due to a particular disease among members of a population who have the disease during a given time period<sup>8</sup>

#### Notes on indicators for mortality

- 1 A measure of the frequency of deaths in a defined population during a given time period, usually a year. A mortality rate is expressed as the number of deaths per 1,000, 10,000, or 100,000 population.
- 2 Infant and child mortality can be measured for specific causes of death such as diarrhoea, respiratory infections, tetanus, malnourishment, plus other outbreaks.
- 3 Deaths occurring while pregnant, during delivery, or within 42 days of termination of pregnancy.
- 4 This indicator measures the magnitude of the problem in a particular setting. Sources of information include survey, hospital, clinic and midwife records, and vital registration.
- 5 The ratio represents obstetric risk per birth. See Huque, A.A. and Koblinsky, M. Maternal mortality: levels, trends and determinants. John Snow International Working Paper:10, Nov 91:24. Information can be obtained through a survey, health facility records, and vital registration. Because maternal mortality is a rare event, a large sample is required for a survey.
- 6 Interventions that affect fertility and obstetric outcome would affect the rate. (Huque and Koblinsky, 91:24)
- 7 Risk is associated with pregnancy and the number of times a woman becomes pregnant. (Huque and Koblinsky, 91:24)
- 8 A case fatality rate is expressed as the number of deaths per 100 cases, such as 10/100, as a percent (such as 10%), or as a decimal (such as 0.1).

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## MORBIDITY<sup>1</sup>

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### Children 0-11 months<sup>2</sup>

- neonatal morbidity rate: number of children with specific types of morbidity<sup>3</sup> per the number of surviving children
- infant morbidity rate: number of children with specific types of morbidity<sup>2</sup> per the number of surviving children





### Children 12-23 months

- number of vaccine preventable diseases, e.g., DPT, polio, measles, and BCG, among children 12-23 months per 100 children age 12-23 months
- number of cases of measles, or other diseases which can be prevented with a vaccine, among immunized children 12-23 months<sup>4</sup>

### Children < 3 or < 5 years

- number of cases of 3rd degree malnutrition among children < 3 yrs/total number of children < 3 yrs
- number of children age < 5 with diarrhoea during the past two weeks per 100 children < 5 years

### Maternal morbidity

- rate of pre-labour maternal morbidity: pregnancy or abortion complications or acute morbidities prior to labour
- rate of labour complications: number of women with complications during labour per 1,000 women experiencing labour<sup>5</sup>

### Total population morbidity

- number of morbidity cases (select the types of morbidity to monitor) in a specific time, compared with the total population<sup>6</sup>

#### Notes on indicators for morbidity

- 1 Morbidity measures reflect the incidence or prevalence of a disease. Incidence refers to the number of new cases of a disease in a defined population during a given period, usually a year. Prevalence is the number of all cases of a disease existing in a defined population at a specific point in time or during a given time period.
- 2 Childhood morbidity indicators can be used to measure specific illnesses. Childhood morbidity indicators are grouped into several age groups since morbidity profiles usually vary according to the age of the child. Moreover PHC services target different age groups.
- 3 The following is a list of typical childhood health problems: diarrhoea/dysentery, anaemia, scabies, diphtheria, whooping cough, tetanus, measles, polio, tuberculosis, ARI, fever, malaria, and others. This needs to be updated to reflect local childhood morbidity.
- 4 To measure the efficacy of a vaccine to prevent disease, compare the number of cases in immunized children with the number of cases in unimmunized children. A vaccine efficacy of 80-90 percent means the vaccine is not as effective as it should be. Vaccine efficacy of less than 80 percent means there is a problem with the vaccine, e.g., cold chain, technique, age of child.
- 5 Complications include dystocia, haemorrhage and shock, eclampsia, infection, maternal distress, foetal distress, abnormal presentation of foetus. This can be used to measure the impact of safe delivery. The indicator could also be calculated as a ratio of women delivering without complications to those with complications.
- 6 A review of PHC service indicators in Appendix A will help determine which types of morbidity are of concern and should be monitored. For example, the number of ARI cases per 1,000 population could be monitored. This indicator can also be used for specific age, socio-economic, areal, workforce, ethnic, etc. populations.

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## DISABILITY

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### Childhood disabilities<sup>1</sup>

- number of childhood disabilities: number of disabilities which occur to children ages 5-10 years during a specific time period (e.g., one year)



- prevalence of childhood disabilities: number of children ages 5-10 years with disabilities compared with all children ages 5-10 years
- incidence of childhood disabilities: number of disabilities occurring to children ages 5-10 during the last year per 100,000 children ages 5-10

### **Adult disabilities<sup>2</sup>**

- number of adult disabilities: the number of disabilities which occur to adults (determine the desired age range) during a specific time period (e.g., one year)
- prevalence of adult disabilities: number of adults (determine the desired age range) with disabilities compared with all adults in the same age range
- incidence of adult disabilities rate: number of disabilities occurring to adults (determine the desired age range) during the last year per 100,000 adults in the same age range

#### *Notes on indicators for disability*

- 1 The following indicators can be used to measure disabilities: for specific impairments, movement, deformity, hearing, blindness, speech, behaviour and others, and among specific sub-populations, e.g., children, senior citizens, industrial workers, with different risks.
- 2 Indicators are similar to those for childhood disabilities and can be measured in terms of prevalence or incidence.

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## **FERTILITY - women 15-49 years**

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- number of births: number of live births in a population in a specific time period
- age specific fertility rate (ASFR): number of live births during a 12-month period per 1,000 eligible couples (women living in a conjugal relationship) by 5-year age groups (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49)
- total fertility rate (TFR): the average number of children that would be born to a woman during her reproductive lifetime under current fertility ages<sup>1</sup>
- crude birth rate (CBR): number of live births in a population during a 12 month reference period per the total size of the population
- median age of marriage: median age of women who were ever married<sup>2</sup>
- induced abortion rate: number of pregnancies that are terminated by induced abortions per 1,000 pregnancies

#### *Notes on indicators for fertility*

- 1 TFR can be measured using several techniques. The last live birth method measures the proportion of eligible women, in 5-year age groups, which had a live birth during the last 12 months. The proportions for each age group are multiplied by five and added to determine the TFR. The proportion of women with a birth in the last year is provided by age specific fertility rates.
- 2 This indicator measures a primary determinant of fertility. Higher age of marriage will reduce the fertility rate by reducing exposure to the risk of pregnancy. A similar indicator is the age-specific proportion married, which is the percentage of women married by 5-year age groups, 15-49 years.





## Appendix D: Summary list of indicators for PHC activity monitoring

### PHC service delivery

		MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>GENERAL PHC HOUSEHOLD VISIT</b>						
<b>Output indicators</b>						
1.1	number or percentage of households visited by CHW in last 3 months	X				
1.2	number or percentage of PHC household visits during the last 3 months where the health worker discussed:					
	- growth monitoring/nutrition (if malnourished child)	X	X			
	- antenatal care (if pregnant woman)	X	X			
	- family planning (if woman of child-bearing age)	X	X			
	- water and sanitation	X	X			
	- immunizations	X	X			
	- oral rehydration therapy (if diarrhoea case)	X	X			
1.3	number or percentage of the target population visited by their CHW in the last 3 months by type:					
	- women 15-49 years of age	X	X			
	- children under 5 years of age	X	X			
	- high-risk cases	X	X			
<b>Input indicators</b>						
1.4	number of households per CHW		X			
1.5	population per CHW		X			
1.6	number of active health workers by type:					
	- CHW	X				
	- public health nurse	X				
	- midwife	X				
<b>HEALTH EDUCATION</b>						
<b>Effect indicators</b>						
2.1	number or percentage of respondents who practise health behaviour outlined in the health education objectives	X				
2.2	number or percentage of the target population who remember health education messages on mass media (television, radio, billboards, posters, etc.) during the last 1-2 weeks	X			X	



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Output indicators</b>					
2.3 number or percentage of respondents who practise health behaviour outlined in the health education objectives	X			X	
2.4 number of the target population that was visited at home and received health information during the last three months	X	X			
2.5 number or percentage of health workers using one or more health education techniques (role playing, demonstration, flip charts, and others used in the local area)	X			X	
2.6 number or percentage of clients receiving health information in a community or group setting.	X	X		X	X
<b>Input indicators</b>					
2.7 number or percentage of CHWs trained in health education		X			X
2.8 number of community organisations which provide health education services		X			X
2.9 number of CHWs compared to 1,000 households or each village		X			X
2.10 number or percentage of respondents that wish to receive additional health education information/topics		X			X
<b>ANTENATAL CARE</b>					
<b>Effect indicators</b>					
3.1 number or percentage of pregnant women identified that are "high-risk"	X				
3.2 number or percentage of women who made three or more prenatal visits during their last pregnancy	X				
3.3 number or percentage of women who received two doses of tetanus toxoid to confer protection prior to delivery	X				
3.4 number or percentage of women who complied with iron folate supplementation regimen during last pregnancy	X				
3.5 number or percentage of women gaining less than 1 kg/month during the second and third trimester				X	





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Output indicators</b>					
3.6 number or percentage of women who received at least one antenatal visit while they were pregnant	X				
3.7 average number of contacts per pregnant women		X		X	
3.8 number or percentage of pregnant women seen in antenatal care who were counselled about danger signs indicating the need to seek further care	X			X	
3.9 number or percentage of workers who regularly track high-risk pregnancies	X	X			
3.10 number or percentage of high-risk women seen by a health worker identified		X		X	
3.11 number or percentage of health workers providing medical attention to high-risk pregnant women or referring them		X		X	
<b>Input indicators</b>					
3.12 number or percentage of health units which experienced stock shortages of iron supplements/malaria prophylaxis		X		X	X
3.13 number of days when iron supplements/malaria prophylaxis were out of stock in the clinic				X	
3.14 number or percentage of women of reproductive age weighing less than 38 kg before pregnancy				X	
<b>SAFE DELIVERY</b>					
<b>Effect indicators</b>					
4.1 number or percentage of deliveries in preferred locations, e.g., hospital, maternity clinic, health clinic, midwifery or birthing centre	X				
4.2 number or percentage of births attended by trained health provider, physician, nurse, midwife, CHW, TBA	X	X			
4.3 number or percentage of mothers with knowledge of danger signs and where to go if complications arise; danger signs include malaria, diabetes, hypertension, liver disease, and others	X			X	
4.4 number or percentage of families with members, men, women, mothers-in-law, aware of danger signs of pregnancy, labour, delivery, and puerperium	X			X	
4.5 ratio of positively treated obstetrical complications to all complications during the last 3-6 months		X	X	X	



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
4.6 percentage of women with optimum weight gain, i.e., no more than 13 kg and no less than 6 kg from pre-pregnancy to childbirth			X	X	
<b>Output indicators</b>					
4.7 number or percentage of pregnant women who were trained about the danger signs of delivery and instructed where to go	X			X	
4.8 number or percentage of obstetrical complication cases treated			X		
<b>Input indicators</b>					
4.9 number or percentage of TBA trained in family planning, recognition of obstetrical complications, and hygienic birthing practices, and linked with the formal health service delivery system		X			X
4.10 number or percentage of district hospitals equipped and functioning as first referral centres		X			X
4.11 number or percentage of facilities and staff using standardised referral protocols to manage obstetrical complications	X			X	X
4.12 number or percentage of health cadres and staff trained in care of obstetrical complications, especially emergency cases					X
4.13 number or percentage of communities with organised transport systems in place to effect referral		X			X
<b>POSTNATAL CARE</b>					
<b>Effect indicators</b>					
5.1 number or percentage of women receiving postnatal care from health care workers	X				
5.2 number or percentage of postnatal women who return for follow-up visits	X			X	
5.3 number or percent of women having delivered who know when and where to return for a postnatal follow-up visit	X			X	
<b>Output indicators</b>					
5.4 number or percentage of women who have delivered and were seen at least once during the postnatal period	X			X	
5.5 number or percentage of health workers counselling mothers on potential danger signs in postpartum period requiring consultation with health worker	X			X	





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
5.6 number or percentage of health workers using sterile materials for cutting and bandaging the umbilical cord, OR number or percentage of mothers who said that health worker used clean materials for cutting and bandaging umbilical cord				X	
5.7 number or percentage of mothers delivered by a trained birth attendant who received counselling on child services after delivery	X			X	
<b>Input indicators</b>					
5.8 number or percentage of clinics/local health workers experiencing shortages of sterile equipment and supplies for appropriate care of the umbilical cord (razor blade, bandages, etc.)				X	
5.9 number or percentage of facilities with one or more health staff trained in postnatal care and counselling		X			X
<b>FAMILY PLANNING</b>					
<b>Effect indicators</b>					
6.1 number or percentage of eligible women knowing at least one modern family planning method and where to obtain it	X				
6.2 number or percentage of women of child-bearing age currently using modern family planning methods	X				
6.3 number or percentage of last pregnancies not intended	X				
6.4 average length of time current contraceptors of modern methods have used the method	X				
6.5 number or percentage of births with less than 24 months spacing, among younger women 15-29 years	X				
6.6 ratio of births to women below 19 or above 34 years	X		X		
<b>Output indicators</b>					
6.7 number or percentage of eligible women contacted by health worker (for outreach)	X				
6.8 number of women receiving methods from CHW (by contraceptive method)	X				
6.9 number of new acceptors by method (particularly longer acting methods)	X				



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
6.10 number or percentage of women seen who were referred from other services (for clinic-based)				X	
6.11 number or percentage of health workers who explain where and when to go for routine follow-up for family planning services				X	
6.12 number or percentage of acceptors followed up	X			X	
6.13 number or percentage of women who received counselling on possible side-effects of the contraceptive chosen, or who were asked about side-effects on follow-up visits	X			X	
<b>Input indicators</b>					
6.14 number or percentage of health units experiencing stock shortages of each contraceptive method in the last month				X	X
6.15 number or percentage of health units who had less than two types of contraceptives in stock any time during the month				X	X
6.16 number or percentage of villages without a regular supplier of contraceptives	X			X	X
<b>ACUTE RESPIRATORY INFECTIONS</b>					
<b>Effect indicators</b>					
7.1 number or percentage of ARI cases (cough, fever, difficulty breathing) treated by health worker correctly	X	X		X	
7.2 number or percentage of ARI patients or their caretakers who know the correct dosage and duration of treatment for ARI	X			X	
7.3 average number of serious symptoms associated with ARI recognised by mothers with children under age five	X			X	
7.4 number or percentage of mothers who know the warning signs of ARI and when to seek care	X			X	
7.5 number or percentage of pneumonia cases receiving standard case management at health facilities			X	X	
7.6 number of ARI hospitalisations per year among children under age five	X		X		
<b>Output indicators</b>					
7.7 number or percentage of women with children under age five that were informed of serious ARI symptoms by CHW or other health provider	X			X	
7.8 number or percentage of health workers using antibiotics only in cases of pneumonia, strep throat, and otitis (per local policy)				X	





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Input indicators</b>					
7.9 number or percentage of health units which experienced stock shortages of antibiotics in the last month				X	
7.10 number or percentage of health units/health workers without functioning timepiece with second hand (to count respirations)				X	
7.11 number or percentage of health workers or facilities with health care workers trained in ARI case management					X
7.12 number or percentage of health facilities that have an ARI treatment chart on the wall				X	X
7.13 number or percentage of health facilities with national treatment guidelines				X	X
<b>BREAST FEEDING</b>					
<b>Effect indicators</b>					
8.1 number or percentage of mothers breast feeding babies up to 12 (18) months of age	X				
8.2 number or percentage of mothers who began breast feeding within 24 hours after birth	X				
8.3 number or percentage of mothers who gave the baby colostrum (local word)	X				
8.4 number or percentage of mothers who know why it is important to give colostrum	X				
8.5 number or percentage of mothers who breast fed and did not provide food supplements during the first four months	X				
8.6 number or percentage of mothers starting to give supplemental foods (water, other liquids, solid foods) to infants between 4 and 6 months of age	X				
8.7 proportion of infants 6-9 months of age who received both breast milk and complementary foods	X				
8.8 number or percentage of mothers who continued to breast feed during the last case of diarrhoea	X			X	
8.9 number or percentage of women with children under age two who know how long to continue breast feeding	X			X	
8.10 number or percentage of currently breast feeding women who know how to position the child and care for her breasts	X			X	
8.11 number or percentage of currently breast feeding women who know what to eat during the lactation period	X			X	



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Output indicators</b>					
8.12 number or percentage of women who were informed during their pregnancy by a health provider about the value of breast feeding and when to start	X			X	
8.13 number or percentage of postnatal women with children under age two who received breast feeding brochures, pamphlets, or other educational materials	X			X	
8.14 number or percentage of mothers who received information about breast feeding during the neonatal period (28 days after birth)	X			X	
<b>Input indicators</b>					
8.15 number of workers who have been trained in breast feeding education		X			X
8.16 number of CHWs or other health providers with correct knowledge about the benefits of breast feeding and when to start				X	
8.17 number of health units which have prenatal and postnatal educational materials for pregnant/postnatal mothers which explain breast feeding (both benefits and procedures)				X	X
<b>DIARRHOEAL DISEASE CONTROL/ORAL REHYDRATION THERAPY</b>					
<b>Effect indicators</b>					
9.1 number or percentage of mothers who have heard of cereal-based-ORT and ORS, SSS, or local names	X				
9.2 number or percentage of mothers who can state three rules of home case management for diarrhoea (fluids, feeding, care seeking)	X			X	
9.3 number or percentage of mothers who know how to prepare cereal-based ORT and ORS solution, SSS, or local name	X			X	
9.4 number or percentage of mothers who know how to administer cereal-based ORT and ORS solution, SSS, or local treatment	X			X	
9.5 number or percentage of mothers who used cereal-based ORT and ORS or a recommended home fluid (total volume increased), and continued feeding during their child's last diarrhoea episode (last month)	X				
9.6 number or percentage of breast feeding women who know to continue breast feeding during diarrhoea episode	X			X	
9.7 number or percentage of mothers who know how often to feed a child with diarrhoea (at least every 3-4 hours)	X			X	





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Output indicators</b>					
9.8 number or percentage of health workers who counsel mothers on preparation and administration of cereal-based ORT and ORS solution, or others				X	
9.9 number or percentage of health workers who correctly showed the mother how to prepare and administer ORS solution				X	
<b>Input indicators</b>					
9.10 number or percentage of health units which experienced stock shortages of ORS in the last month		X		X	X
9.11 number or percentage of mothers who live within a reasonable distance as defined by local norms and expressed in terms of time, of a health facility or provider that has a regular supply of ORS and antibiotics, and practises correct case management		X		X	X
<b>CHILDHOOD DISABILITIES</b>					
<b>Effect indicators</b>					
10.1 number or percentage of disabled children enrolled in special schools or community programmes	X				
10.2 number or percentage of disabled children covered by appropriate health services	X				
10.3 number or percentage of clients/mothers with knowledge of special schools, community programmes, and NGOs involved with disabled children	X				
10.4 number or percentage of mothers who know appropriate care for disabled child	X				
10.5 number or percentage of mothers with disabled children who know how to prevent a similar disability	X				
<b>Output indicators</b>					
10.6 number or percentage of clients with disabilities referred for diagnosis or treatment	X			X	
10.7 number or percentage of health workers currently providing counselling/treatment for disabilities	X			X	



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Input indicators</b>					
10.8 number or percentage of health workers who can identify signs and symptoms associated with disabilities				X	
10.9 number or percentage of health workers who know how childhood disabilities can be prevented				X	
10.10 number or percentage of health workers with correct knowledge of national treatment/referral/counselling guidelines for disabilities				X	
10.11 number or percentage of health centres without treatment/counselling facilities for clients with disabilities				X	
10.12 number or percentage of health centres without established treatment, referral, and counselling guidelines				X	
<b>CHILD IMMUNIZATION</b>					
<b>Effect indicators</b>					
11.1 number or percentage of children age 12-23 months who are fully immunized with BCG, DPT, measles, and polio vaccines	X		X		
11.2 number or percentage of children age 12-23 months never immunized with BCG, DPT, measles, and polio vaccines	X		X		
11.3 number or percentage of mothers who know the age at which children should be immunized against measles (9-12 months)	X			X	
11.4 number or percentage of mothers whose children are not completely immunized who know when to return for the next immunization	X			X	
11.5 number or percentage of children age 12-23 months whose mothers can present a completely (per local standards) filled immunization card, given the age of the child	X			X	
<b>Output indicators</b>					
11.6 number or percentage of health workers using sterile needles and syringes for each injection				X	
11.7 for outreach programmes, number or percentage of immunization sessions held (per area)		X			X
11.8 number or percentage of health workers counselling mothers on possible side-effects of vaccines				X	





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Input indicators</b>					
11.9 number or percentage of health units, or number or percentage of immunization sessions, which experience shortages of vaccines, needles, syringes, and/or immunization cards				X	
11.10 number or percentage of health units whose refrigerator has not been at a temperature between 0°C and 8°C at all times during the previous period				X	
<b>GROWTH MONITORING/ NUTRITION EDUCATION</b>					
<b>Effect indicators</b>					
12.1 number or percentage of children under two years of age in the target area weighed at least once during the past quarter	X			X	
12.2 number or percentage of mothers breast feeding babies up to 12 (18) months of age	X				
12.3 number or percentage of mothers starting to give supplemental foods to infants between four and six months of age	X				
12.4 number or percentage of children whose weight-for-age is below the normal range or whose growth is faltering (per local norms)	X			X	
12.5 number or percentage of mothers with children under age two who interpret growth chart information	X			X	
<b>Output indicators</b>					
12.6 number or percentage of children under two years enrolled in a growth monitoring programme	X	X			
12.7 number or percentage of mothers with children under two years who were explained growth monitoring chart by CHW during the last 3-6 months	X			X	
12.8 for outreach programmes, number of growth monitoring sessions held (per area)		X		X	
12.9 number or percentage of health workers who track malnourished children		X		X	
12.10 number or percentage of high-risk children (malnourished ) followed up	X			X	
12.11 number or percentage of mothers told child's nutritional status	X			X	
12.12 number or percentage of mothers with growth-faltering children who received counselling on appropriate feeding				X	



		MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Input indicators</b>						
12.13	number or percentage of health workers/health units which do not have a functioning scale (accurate to 1/10 kg)				X	X
12.14	number or percentage of health units (or growth monitoring sessions) experiencing shortages of growth cards in the last month		X		X	X
<b>WATER SUPPLY, HYGIENE, AND SANITATION</b>						
<b>Effect indicators</b>						
13.1	number or percentage of households receiving drinking water from a clean source, faucet, tap, pipe, covered well, or other safe source, within 15-minute walk	X			X	
13.2	number or percentage of households using a clean facility, water-seal latrine, pit privy, or WC	X			X	
13.3	number or percentage of mothers knowing the importance of hand washing	X			X	
13.4	number or percentage of mothers with children under age two who use a baby potty	X		X		
<b>Output indicators</b>						
13.5	number or percentage of health workers inspecting latrines (per local standards)		X		X	X
13.6	number or percentage of health workers inspecting community management of local water sources (per local standards)		X		X	X
13.7	number of latrines built during the last year		X			X
13.8	number of wells or other water sources constructed during the last year		X			X
<b>Input indicators</b>						
13.9	number of wells or other water sources constructed per 1,000 population					X
13.10	number of latrines built per 1,000 population					X
13.11	number or percentage of communities with access to health staff or technicians with resources, information, funds, supplies, for building safe water supply systems and latrines					X





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>ACCIDENTS AND INJURIES</b>					
<b>Effect indicators</b>					
14.1 number or percentage of respondents with knowledge of how to care for accidents and injuries	X				
14.2 number or percentage of respondents with knowledge of an emergency care facility	X				
14.3 number of respondents who use safety precautions and equipment on a daily basis	X				
<b>Output indicators</b>					
14.4 number of respondents treated for an injury (by type)	X			X	
14.5 in a work place or other high-risk environment, number of safety regulations implemented and enforced				X	X
14.6 number or percentage of health workers, CHWs, factory or plant cadres, traditional practitioners, etc., trained in injury care	X	X		X	X
14.7 number or percentage of health workers who received formal training in hazard identification and intervention		X		X	X
<b>Input indicators</b>					
14.8 number or percentage of health care facilities without 24-hour emergency care services		X		X	X
14.9 number or percentage of health care facilities without treatment and referral procedures for clients with injuries		X		X	X
<b>CHRONIC, NON-COMMUNICABLE DISEASES</b>					
<b>Hypertension</b>					
<b>Effect indicators</b>					
15.1 number or percentage of patients with hypertension	X	X	X		
15.2 number or percentage of patients who developed other complications of hypertension	X	X	X	X	
15.3 number or percentage of patients, diagnosed with chronic hypertension, who are in a systematic anti-hypertensive therapy programme	X	X		X	
15.4 number or percentage of patients with moderate hypertension who follow a prescribed diet on a daily basis	X			X	
15.5 number or percentage of patients who take medication as prescribed	X			X	



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
15.6 number or percentage of patients who practise the appropriate diet on a daily basis	X			X	
15.7 number or percentage of patients who were given a special regimen sheet for the use of medication and diet	X			X	
<b>Output indicators</b>					
15.8 number of clients diagnosed for hypertension	X	X		X	
15.9 number of patients with hypertension who were treated	X	X		X	
15.10 number of patients who switched from prescribed medicine to diet		X		X	
15.11 number of health workers who are clinically knowledgeable in providing diet and medication regimen to patients with hypertension				X	
15.12 number of systematic visits by patients with hypertension		X		X	
15.13 number or percentage of patients who have been assessed for renal function		X		X	
15.14 number of patients with hypertension who were provided with instructions for the use of medication and diet	X	X		X	
<b>Input indicators</b>					
15.15 number of health workers who can provide diet and medication information to patients with hypertension				X	
15.16 number of primary health centres with daily/weekly availability of trained family doctor				X	
15.17 number of health centres with sphygmomanometers				X	
15.18 number of primary health centres with functioning laboratory equipment and medication for hypertension				X	
<b>Diabetes</b>					
<b>Effect indicators</b>					
15.19 number or percentage of diabetic patients with annual assessment of renal function	X	X		X	
15.20 number or percentage of diabetic patients with semi-annual measurement of glycosylated Hgb	X	X		X	
15.21 number or percentage of diabetic patients with documented home glucose monitoring	X	X		X	
15.22 number or percentage of diabetic patients with discrepancies between home and clinic monitored results				X	
15.23 number or percentage of diabetic patients with family members who know how to handle a diabetic emergency	X				





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Output indicators</b>					
15.24 number or percentage of persons diagnosed for diabetes mellitus		X	X		X
15.25 number or percentage of patients treated for diabetes mellitus by a physician		X		X	
15.26 number or percentage of patients treated for diabetic ketoacidosis		X		X	
15.27 number or percentage of patients treated for diabetic foot lesions			X		X
<b>Input indicators</b>					
15.28 number of general practitioners or family physicians per 1,000 households	X				X
15.29 presence of equipment and other materials in the health units; glucose monitoring, blood pressure, protocol for home glucose monitoring and insulin schedule	X			X	X
<b>Anaemia</b>					
<b>Effect indicators</b>					
15.30 number or percentage of anaemic patients with semi-annual evaluation and follow-up haemoglobin and haematocrit	X			X	
15.31 number or percentage of anaemic patients with documented improvement in anaemic condition	X			X	
15.32 number or percentage of anaemic women who know the treatment for anaemia	X			X	
<b>Output indicators</b>					
15.33 number or percentage of persons diagnosed for anaemia	X		X		
15.34 number or percentage of patients treated for anaemia	X		X		
15.35 number or percentage of patients treated for symptomatic anaemic conditions (pale, weak, etc.)	X		X	X	
15.36 number or percentage of patients who received education for nutritional health	X			X	
<b>Input indicators</b>					
15.37 number of general practitioners of family physicians per 1,000 household with knowledge or understanding of anaemia		X		X	X
<b>MALARIA</b>					
<b>Effect indicators</b>					
16.1 number or percentage who know how malaria is spread	X			X	



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
16.2 number or percentage of population that are protecting themselves against malaria	X				
16.3 number or percentage of malaria (fever) cases treated with anti-malarial drugs at home, by mother who knows correct dosage	X				
16.4 number or percentage of patients who were prescribed anti-malarial drugs who know dosage, frequency, and duration of treatment	X	X		X	
<b>Output indicators</b>					
16.5 number or percentage of malaria (fever) cases treated at health unit	X		X	X	
16.6 in areas where confirmation is the norm, number or percentage of health workers who take/request a blood slide from malaria/fever cases	X	X	X	X	
16.7 number or percentage of health workers who screen fever patients for signs/symptoms of other serious illnesses (meningitis, pneumonia, etc.)			X	X	
<b>Input indicators</b>					
16.8 number or percentage of health units experiencing stock shortages of anti-malarial drugs in the last month				X	X
16.9 number or percentage of health units without functioning laboratory equipment				X	X
<b>TREATMENT OF MINOR AILMENTS</b>					
<b>Effect indicators</b>					
17.1 number or percentage of illness episodes treated at health unit	X	X			
17.2 number or percentage of patients who were able to obtain all of the medication prescribed in the health unit	X	X			
17.3 number of patients receiving laboratory services in the same health unit per number of patients requiring laboratory services	X				
17.4 number or percentage of patients or their attendants who understand the treatment prescribed; how much, how long, how often				X	
<b>Output indicators</b>					
17.5 number of treatments given during last period by condition		X			
17.6 number or percentage of health workers asking at least 5 history questions and carrying out at least one physical exam				X	





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Input indicators</b>					
17.7 number or percentage of health workers who know the explicit criteria for referring patients to a higher level (per local policy)				X	X
17.8 number or percentage of health units without functioning:					
- stethoscope		X		X	
- thermometer		X		X	
- scale		X		X	
- blood pressure cuff		X		X	
- watch with second hand		X		X	
- microscope and slides		X		X	
17.9 number or percentage of cases where prescribed medicines were available at the health unit at the time of consultation, compared to all cases that were prescribed medicines	X			X	
17.10 availability of drugs for high volume conditions		X		X	X
17.11 availability of laboratory tests used more frequently		X		X	X

## TUBERCULOSIS

### Effect indicators

18.1 number or percentage of children vaccinated with BCG	X				
18.2 number or percentage of target population who know how TB is spread and how to prevent infection	X				
18.3 number or percentage of detected tuberculosis cases followed to cure	X		X		
18.4 number of active tuberculosis cases	X		X		
18.5 number or percentage of tuberculosis patients knowing why it is important to complete treatment	X				
18.6 number or percentage of tuberculosis patients knowing the correct dosage and duration of treatment for tuberculosis	X			X	
18.7 number or percentage of population with persistent cough lasting more than 2 weeks who sought treatment for TB	X			X	



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Output indicators</b>					
18.8 number or percentage of suspected tuberculosis cases sent for confirmation		X		X	
18.9 number or percentage of health workers who have a system for following up suspected and confirmed tuberculosis cases				X	
18.10 number or percentage of suspected and confirmed tuberculosis cases followed up		X		X	
<b>Input indicators</b>					
18.11 number or percentage of health units without adequate equipment to diagnose tuberculosis		X		X	X
18.12 if the health unit is a tuberculosis treatment centre, number of days when tuberculosis drugs were out of stock		X		X	X
<b>SEXUALLY TRANSMITTED DISEASES</b>					
<b>Effect indicators</b>					
19.1 number or percentage of target groups screened last 3 months (or shorter period if necessary) for HIV/STDs	X		X		
19.2 number or percentage of target groups screened with an STD during the past 12 months	X		X		
19.3 number or percentage of target population with correct knowledge of the means of HIV/STD transmission	X			X	
19.4 number or percentage of target population who know that condoms provide protection against infection with HIV/STDs	X				
19.5 number or percentage of target population reporting sex with use of condom	X			X	
19.6 number or percentage of pregnancies that occur among HIV-infected women	X		X		
19.7 number or percentage of HIV-infected women of child-bearing age who use a barrier contraceptive method (male or female condom)	X				
19.8 number or percentage of the target population who report having had at least one sex partner other than their regular sex partner(s) in the last six months	X				
<b>Output indicators</b>					
19.9 number or percentage of injections given with sterile needles		X		X	X





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
19.10 number or percentage of health workers who correctly dispose of contaminated materials		X		X	X
19.11 number or percentage of clients referred by health workers for diagnosis, treatment, or testing		X		X	
19.12 number or percentage of clients receiving antibiotics for STDs	X	X		X	
19.13 number of condoms distributed to the target population		X		X	
19.14 number of IEC materials distributed to target population	X			X	
19.15 number of group HIV/STD prevention activities held during the last 1-3 months; meetings, presentations, TV/radio broadcasts, media events, etc.		X		X	
<b>Input indicators</b>					
19.16 number or percentage of the target population with access to STD-related services		X			X
19.17 number or percentage of appropriate outlet centres having uninterrupted supply of condoms during preceding 12 months		X		X	X
19.18 number or percentage of health centres providing STD-related services with uninterrupted supply of appropriate antibiotics during preceding 12 months				X	
19.19 number or percentage of health centres without proper equipment or laboratory facilities				X	
19.20 number or percentage of health units with identification, treatment, referral, and follow-up guidelines				X	
19.21 number or percentage of treatment facilities without counselling activities				X	X
19.22 number or percentage of health workers who are trained in care/counselling of HIV/STD patients				X	X
19.23 number or percentage of health workers with correct knowledge of the modes of transmission of HIV/STDs				X	
19.24 number or percentage of health workers who know the correct diagnosis, treatment, referral, or counselling guidelines for HIV/STDs				X	



## PHC management service

	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>PLANNING</b>					
<b>Effect indicators</b>					
Outcomes for planning would be the implementation of planned activities and the achievement of programme objectives. These should be reflected in coverage and KAP indicators for specific service delivery interventions (See Appendix A for indicators).	X				
<b>Output indicators</b>					
1.1 number or percentage of health units which have a written mission statement that defines their target population, the programme's activities, and its goals					X
1.2 number or percentage of health units which have concrete measurable objectives for coverage, service quality, changes in population knowledge/practice					X
1.3 number or percentage of health units whose plans have corresponding budgets					X
<b>Input indicators</b>					
1.4 number or percentage of health units which have clearly defined catchment areas they are to serve		X			X
1.5 number or percentage of health units which have information on the population they serve: total number, number of children < 2, number of births a year, number of women 15-49		X			X
<b>PERSONNEL MANAGEMENT</b>					
<b>Effect indicators</b>					
2.1 number or percentage of vacant posts					X
2.2 average duration at a post for each type of worker					X
<b>Output indicators</b>					
2.3 number or percentage of staff whose job descriptions have been updated in the last year to reflect current responsibilities					X
2.4 number or percentage of supervisors who develop specific work plans with their staff at regular intervals (per local norms)					X
2.5 number or percentage of supervisors who review whether work assignments have been completed					X





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Input indicators</b>					
2.6 number or percentage of staff members with job descriptions					X
2.7 number or percentage of facilities that provide cost-recovery (expense/revenue) data					X
2.8 number or percentage of local offices that submit budget estimates on time					X
2.9 number or percentage of facilities which have guidelines for developing work plans					X
<b>TRAINING</b>					
<b>Effect indicators</b>					
3.1 number or percentage of participants in training who showed improvement between the pre- and post-tests					X
<b>Output indicators</b>					
3.2 number or percentage of health workers having received training or refresher training in the last period for any intervention, or for specific interventions				X	X
3.3 number or percentage of training sessions that allowed participants to put new knowledge and skills into practice during training, e.g., using real life cases or role-play				X	X
3.4 number or percentage of training sessions in which technical content was complete and accurate				X	X
<b>Input indicators</b>					
3.5 number or percentage of health units using programme specific information (from MIS or supervision) about service quality to plan or focus training sessions given in the last period		X		X	X
3.6 number or percentage of trainers who have received instruction in training methods					X
3.7 number or percentage of health facilities that hold PHC training sessions					X
<b>SUPERVISION</b>					
<b>Effect indicators</b>					
4.1 number or percentage of health workers that feel they are receiving adequate support from their supervisors					X



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
<b>Output indicators</b>					
4.2 number or percentage of supervisees visited by or meeting with their supervisors during the last period (per local norms)					X
4.3 number or percentage of health workers whose supervisor observed them during service delivery, or through role-play/simulation, during the last supervision visit					X
4.4 number or percentage of supervision visits that included problems identified and actions taken					X
4.5 number or percentage of supervision visits that included review or follow-up on problems from previous supervision visits					X
<b>Input indicators</b>					
4.6 number or percentage of field supervisors who have been trained in guidance and quality assessment					X
4.7 number or percentage of health units that have written guidelines or protocols for supervision					X
<b>FINANCIAL MANAGEMENT</b>					
<b>Effect indicators</b>					
5.1 number or percentage of health workers that were paid on time in the last period					X
5.2 number or percentage of health units that achieve cost-recovery and their planned service goals					X
5.3 average percentage of costs recovered from revenue					X
<b>Output indicators</b>					
5.4 number or percentage of health units whose accounting records are up to date and balanced monthly					X
5.5 number or percentage of health units with systems of checks and balances for handling cash, including vouchers, disbursements by check, verification of accounts					X
5.6 number or percentage of health units whose financial reports are evaluated by making comparisons of "budget" to "actual" financial performance					X
<b>Input indicators</b>					
5.7 number or percentage of health workers trained in financial management					X



	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
5.8 number or percentage of financial management staff with training in finance administration					X
<b>LOGISTICS MANAGEMENT</b>					
<b>Effect indicators</b>					
6.1 number or percentage of health units receiving the amounts of materials they requisitioned					X
6.2 number or percentage of health or support activities cancelled due to lack of transportation					X
<b>Output indicators</b>					
6.3 average interval between a health unit making a requisition and reception of requested supplies					X
6.4 number or percentage of health units using stock inventory and consumption patterns as the basis of preparing requisitions					X
6.5 number or percentage of health units that carry out a physical inventory to verify theoretical stock levels with actual physical counts					X
6.6 number or percentage of health units who have to cancel field visits and other off-site activities planned for lack of adequate fuel supply					X
<b>Input indicators</b>					
6.7 number or percentage of health units with established checklists or procedures for procurement					X
6.8 number or percentage of health units with schedules or appointment books for health unit vehicle use					X
<b>INFORMATION MANAGEMENT</b>					
<b>Effect indicators</b>					
7.1 number or percentage of health units that utilise monitoring information to identify district-wide and localised problems and strengths, and actions to take					X
7.2 number or percentage of local health units that receive feedback from district level managers on results of district-wide monitoring					X
<b>Output indicators</b>					
7.3 number or percentage of districts that compile monitoring information from the health unit level					X
<b>Input indicators</b>					
7.4 number or percentage of health units who have indicators they routinely monitor					X





	MOD 2	MOD 3	MOD 4	MOD 6	MOD 7
7.5 number or percentage of health units that maintain records on high-risk cases					X
<b>COMMUNITY ORGANISATION</b>					
<b>Effect indicators</b>					
8.1 number or percentage of community members who state that PHC services are accessible, and convenient					X
8.2 number or percentage of community members who state that the PHC services are acceptable, and relevant to their needs					X
<b>Output indicators</b>					
8.3 number or percentage of community committees that met at least monthly (per local norms) during the last quarter					X
8.4 using an area relevant to your programme, number or percentage of communities that participate in each of the following activities, e.g., health, religion, family planning, youth, sports, income generating, etc.					X
8.5 number or percentage of community committees that participate in problem analysis and problem-solving					X
8.6 level of community contribution directed to PHC services					X
8.7 number or percentage of community participating in health activities					X
<b>Input indicators</b>					
8.8 number or percentage of health units which have an affiliated health committee or community organisation					X
8.9 number of trained community organisers					X
8.10 availability of resources, labour, funds, buildings, political support, mass activities and materials, to assist in organising communities					X



## Appendix E: Blank worksheets

WORKSHEET FOR SPECIFYING THE MONITORING OBJECTIVES					
What to monitor	Purpose & (r)outine or (s)hort-term	Internal users		External users	
		Providers	Managers	Donors	Others
PHC services					
Management services					

WORKSHEET FOR SPECIFYING THE SCOPE OF MONITORING	
1.	What geographic area will be covered?
2.	Which facilities or sub-projects will be monitored?
3.	Which personnel (managers, providers, & volunteers) will be selected?
4.	How long will the monitoring continue?



### WORKSHEET FOR SELECTING INDICATORS AND STANDARDS

Indicators	Formulation	Standards	Frequency
<b>PHC services</b>			
Effect			
Output			
Input			
<b>Management services</b>			
Effect			
Output			
Input			

### WORKSHEET TO SELECT DATA SOURCES AND TECHNIQUES

Data Source:	Records	Provider-client interface	Client	Health worker
DC Technique:	Review	Observation	Survey/ Interview	Interview
<b>PHC service indicator</b>				
<b>Management service indicators</b>				





**WORKSHEET FOR SPECIFYING DATA COLLECTION,  
SUPERVISION AND PROCESSING**

Staff	Responsibility		
	Collection	Supervision	Processing

**WORKSHEET FOR COMPARING ACTUAL PERFORMANCE  
WITH ITS STANDARD OF PERFORMANCE**

Components	Actual performance	Standard of performance	% Achieved of standard	Action to be taken
PHC service indicators				
Management service indicators				





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## Acronyms and abbreviations

AIDS	Acquired immune deficiency syndrome
AIHD	ASEAN Institute for Health Development, Bangkok
AKCHP	Aga Khan Community Health Programme, Dhaka
AKF	Aga Khan Foundation
ARI	Acute respiratory infection
ASFR	Age-specific fertility rate
BCG	Bacillus of Calmette and Guérin (tuberculosis vaccine)
BRAC	Bangladesh Rural Advancement Committee
CBR	Crude birth rate
CHW	Community health worker
CMR	Child mortality rate
CYP	Couple-years protection
DPT	Diphtheria, pertussis and tetanus vaccines
EPI	Expanded Programme on Immunization
FP	Family planning
GM	Growth monitoring
HH	Household
HIV	Human immunodeficiency virus
HPRC	Health and Population Research Corporation, Bangkok
IEC	Information, education, communication
IMR	Infant mortality rate
IUD	Intra-uterine device
KAP	Knowledge, attitudes, practice (behaviour)
LTR	Life-time risk of death
MIS	Management information system
MMR	Maternal mortality rate
MOH	Ministry of health
MOPH	Ministry of public health
NGO	Non-governmental organisation
OPV	Oral poliovirus vaccine
ORS	Oral rehydration salts
ORT	Oral rehydration therapy
PHC	Primary health care
PHC MAP	Primary Health Care Management Advancement Programme
PNC	Peri-natal care
PRICOR	Primary Health Care Operations Research
Rp	Rupiah, the currency of Indonesia
SES	Socio-economic status
SSS	Sugar-salt solution



STD	Sexually transmitted diseases
SVF	Somboon Vacharotai Foundation
TB	Tuberculosis
TBA	Traditional birth attendant
TFR	Total fertility rate
TT	Tetanus toxoid
WC	Water closet
WHO	World Health Organization



## Glossary

**Assessment:** An evaluation or judgement

**Catchment (area):** The geographic area surrounding one or more health facilities. It refers to the population residing in that area, which includes the programme's target populations.

**Community health worker (CHW):** A person indigenous to the community who provides basic preventive and curative health services to members of the community. Includes village health workers, health guides, and other terms.

**Coverage:** The proportion of a target group that has received a service or is protected from a disease or health problem.

**Effectiveness:** The degree to which desired outcomes are achieved.

**Efficiency:** The degree to which desired outcomes are achieved without wasting resources.

**Goals:** The impact your programme hopes to have on health. Goal statements specify improvement desired, target group, amount of change expected and date for achievement.

**Incidence:** The number of new cases of a disease in a defined population during a specified period of time.

**Indicator:** An indirect measure of an event or condition. For example, a baby's weight for age is an indicator of the baby's nutritional status.

**Inputs:** Resources (personnel, equipment, supplies, information and money)

**Management:** The art and science of getting things done through people.

**Monitoring,**

**Routine:** Compilation and analysis of a core set of indicators on a regular basis.

**Short-term:** Compilation and analysis of a specific set of indicators on specific activities for a limited period of time.

**Objectives:** The output and/or effect your PHC programme hopes to have.

**Outcomes:** Results of your PHC programme, including outputs, effects and impacts.

**Outputs:** Products and services provided by a PHC programme.

**Effects:** Changes in knowledge, skills, attitude, and behaviour (including coverage) as a result of a PHC programme.

**Impacts:** Changes in health status, (mortality, morbidity, disability, fertility) as a result of a PHC programme.

**Percentage:** A proportion multiplied by 100. For example, 3,500 children immunized out of 5,000  $\times 100$   $(3,250/5,000) \times 100 = 65\%$ .

**Prevalence:** The total number of cases of a disease in a defined population at a specified point in time. Also used with "coverage," as with the





"contraceptive prevalence rate," meaning the proportion of the target population that is currently practising family planning.

**Primary health care:** Essential health care, accessible at affordable cost to the community and the country, based on practical, scientifically sound and socially acceptable methods. It includes at least eight components: health education, proper nutrition, basic sanitation, maternal and child health care, immunization, control of common diseases and injuries, prevention of local endemic diseases, essential drugs.

**Processes:** Activities or tasks carried out through the PHC programme.

**Proportion:** A special type of ratio expressing a relationship between a part and the whole. For example, 3,250 children immunized out of 5,000 ( $3,250/5,000$ ) = .65.

**Rate:** A measure of the frequency of occurrence of an event, such as cases per month.

**Ratio:** Two numbers related to each other in a fraction or decimal, such as the number of cases of measles per 1,000 children. Any fraction, quotient, proportion, or percentage is a ratio.

**Register:** A written or printed record containing regular entries of events or other items, such as name, address, births, deaths, symptoms, treatments given, and so forth. Typical registers are for households, families, individual visits to health facilities, and daily visits of health workers to households.

**Resource:** Available means, usually personnel, materials, funds, information

**System:** A set of discrete, but interdependent, components designed to achieve one or more objectives.

**Target group:** Specific groups of people designated to receive a PHC service, such as children under age three.







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# **MODULE 5**

## **USER'S GUIDE**

